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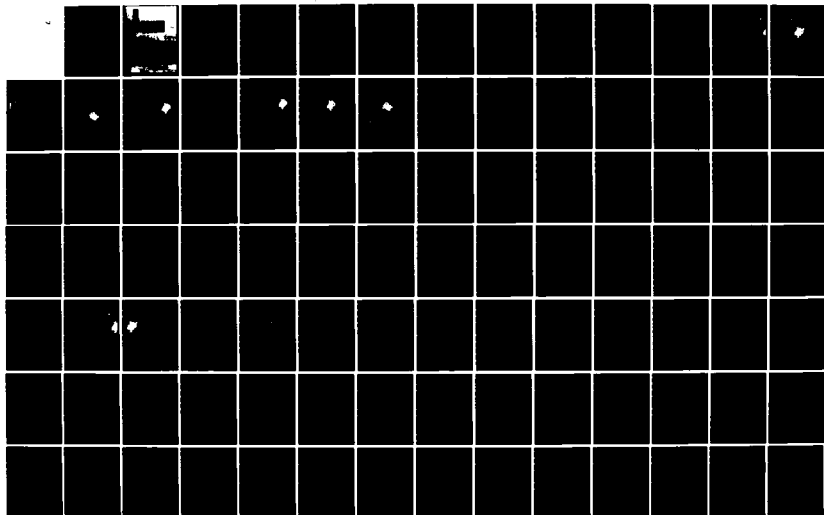
ARCHEOLOGICAL AND HISTORIC CULTURAL RESOURCES INVENTORY 1/2
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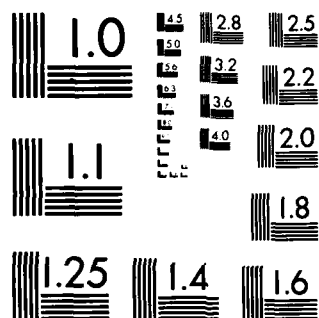
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TECHNICAL REPORT

AN INVESTIGATION OF THE EFFECTS OF A HIGH-POWER
RADIO-FREQUENCY ELECTROMAGNETIC FIELD ON THE
ELECTRIC CONTROL SYSTEM OF A MISSILE

DAVID H. BROWN, JR.

PH.D. THESIS

UNIVERSITY OF CALIFORNIA, SAN DIEGO, CALIF.

SEP 27 1964

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FINAL REPORT

Archeological and Historic Cultural Resources Inventory for a Proposed
Flood Control Project at Grafton, Walsh County, North Dakota

Contract #DACW37-81-M-2533

Prepared for:

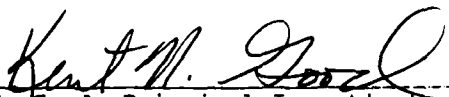
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October 1983

ABSTRACT

A cultural resource inventory of proposed Plan 1, Plan 2, Plan 3, Plan 5, and Plan 6 flood control right-of-way lines and areas at Grafton, North Dakota, was conducted by Historical and Archaeological Surveys, Inc., for the U.S. Army Corps of Engineers, St. Paul District (Contract #DACW37-M-81-2533). Literature and records search and review, pedestrian survey, and shovel testing were completed in September 1981. Historical and Archaeological Surveys, Inc. returned to the Grafton area in spring 1982 in response to State Historic Preservation Office draft report review comments, which recommended data collection about a number of bridges located along the Park River at Grafton. These bridges may be affected by proposed flood control measures.

No previously recorded cultural resource sites are located within any areas proposed for flood control measures, and there are no currently listed National Register of Historic Places properties within any of the five proposed flood control plans. One previously unrecorded historic cultural resource site was recorded during conduct of the 1981 survey--Plant View Homestead. This site lies within the 30.5 m (100 ft.) right-of-way survey width of the ring levee proposed in Plan 1, and the flood bypass channel 152.4 m (500 ft.) right-of-way survey width of the same plan intersects it. Shallow subsurface shovel tests were made at the Plant View Homestead, revealing a rubble of cobble-size concrete chunks to a depth of at least 25 cm (9.8 in.). Based on data collected during the spring 1982 revisit to the area, one Burlington Northern railroad bridge was recorded as an architectural/historic cultural resource site. This site lies within an area that potentially will be impacted by channel and bridge modification proposed in Plan 3 and in Plan 5, or bridge modification or removal proposed in Plan 6.

Historical and Archaeological Surveys, Inc., recommends that the documentary research conducted for and the subsurface tests conducted at the Plant View Homestead site are sufficient to determine that this site is not significant, nor is it eligible for inclusion on the National Register of Historic Places; the State Historic Preservation Office has concurred with this determination, and no further work is recommended for this site. The Railroad Bridge site is considered to have the potential for significance, since it represents what may be the only remaining structure of its kind in the Red River Valley. Recommendations concerning the Railroad Bridge site ideally include implementation of flood control measures other than Plan 3, Plan 5, or Plan 6, in order to avoid the site completely. If the railroad bridge site cannot be avoided, mitigation minimally should include: 1) in-depth literature search to include review of the files of the Burlington Northern Railroad Company's engineer's office in St. Paul, Minnesota; 2) compilation of an extensive photographic record of the structure; 3) oral history interviews with area residents and/or appropriate Burlington Northern Railroad personnel; and 4) search through old, local newspapers housed at the Walsh County Historical Society in Minto, North Dakota for documentation relevant to the site.

MANAGEMENT SUMMARY

Cultural resource reconnaissance survey and historical documentary research was undertaken at Grafton, North Dakota, to assist in planning for proposed flood control measures in and around Grafton. The Scope of Work (Appendix I) outlines legal mandates requiring this study and gives specifications for conduct of the study.

Sponsor of the project is the St. Paul District, U.S. Army Corps of Engineers (COE), and the contractor is Historical and Archaeological Surveys, Inc. (HASI), then of Grand Forks, North Dakota. Contract DACW37-81-M2533 for \$3,977.00 was awarded on 8 September 1981. HASI subcontracted Historical Research, Inc. (HRI) of Minneapolis, Minnesota to compile the environmental setting and protohistoric/historic overview sections of this report.

Fieldwork was initiated on 16 September and completed on 23 September by HASI archeologists James C. Dahlberg and Wayne Roberson. The field report was begun 24 September 1981 in HASI's main laboratory, then located in Grand Forks. Site form preparation, drafting, and other procedures for the draft report were begun at that time, and they proceeded intermittently until 20 October 1981, when full-time was devoted to draft report preparation. Dr. Joe Roberts, HRI, compiled the environmental setting and protohistoric/historic overview sections of this report in early October 1981. These were edited and incorporated into the draft report by HASI personnel as they completed the draft report. Site files and records search were begun in mid-September 1981, and they were conducted at the State Historical Society of North Dakota (SHSND) in Bismarck, North Dakota. The National Register of Historic Places (NRHP) files, also housed at SHSND, were checked before 28 September 1981.

There are no currently listed NRHP properties within any of the five alternate flood control plan areas surveyed. No previously recorded cultural resource sites lie within the survey width rights-of-way (ROW) of any construction measures proposed in any of the five plans. Two cultural resource sites were recorded during the present study: an historic site which lies within the 30.5 m (100 ft.) ROW survey width of the ring levee proposed in Plan 1, and an architectural/historic site that lies within proposed channel and bridge modification (Plans 3 and 5) and proposed bridge modification or removal (Plan 6) areas.

Reconnaissance survey was not accomplished in consecutive days because of rain, but otherwise survey was not limited seriously by weather conditions. Numerous areas along the riverbank contained dumps of illicitly-deposited refuse. This comparatively recent debris is abundant in some areas, but no discernable concentrations were recorded as sites, primarily because of the dubious historical significance of electrical appliance parts, etc., and because such deposits lacked integrity of deposition. This study did result in the recording of two cultural resource sites, and the determination that no previously recorded sites or currently listed NRHP properties are situated within survey widths of proposed ROW lines and areas.

One located and recorded cultural resource site, the Plant View Homestead (32WA4), is the remains of a single foundation, with a very sparse historic cultural material scatter immediately around it. Shovel tests were conducted within the rectangular limits of the site, and they revealed a rubble of cobble-size concrete chunks to a depth of at least 25 cm (9.8 in.). These cobble-size concrete chunks are mixed with an organic eolian silt.

Site 32WA4 is situated within the 30.5 m (100 ft.) ROW survey width of the ring levee proposed in Plan 1, and the flood bypass channel 152.4 m (500 ft.) ROW survey width of the same plan intersects it. Shovel tests conducted at site 32WA4 revealed that the site probably has no cellar and no pertinent subsurface deposit beneath the foundation remnants. The immediate vicinity of the foundation has been plowed so that any significant subsurface deposits should have been revealed and none were. The surface scatter of cultural material at the site is very sparse, close to the foundation remains, and original location or deposition of the materials has been altered by plowing; additionally, what cultural material exists at the site maintains little culturally diagnostic historical importance. A deeds search and review of family biographies of Walsh County residents (Berg 1976) conducted in spring 1982 gave no indication that the Plant View Homestead site was associated with any historically important persons or events, and no extant structures exist at the site (i.e., the site does not retain architectural significance). Based on data obtained from field reconnaissance, shovel tests, and documentary research, as listed above, HASI determined that site 32WA4 is not significant nor is it eligible for inclusion on the NRHP. The State Historic Preservation Office has concurred with HASI's determination that this site lacks significance, and no further work is recommended for site 32WA4.

A second cultural resource site, the Railroad Bridge site (32WA5) was recorded in June 1982. This plate steel, span railroad bridge was built in 1907, for or by the Great Northern Railroad Company. The bridge retains the original cut sandstone block piers and abutment, and it may represent the only structure of this exact design that remains in the Red River Valley. Because the bridge may be the only remaining example of this architectural design in the region, HASI determined that the site is architecturally significant. Site 32WA5 is situated within an area that would be impacted by channel and bridge modification proposed in Plan 3 and in Plan 5, or bridge modification or removal proposed in Plan 6. Recommendations concerning the Railroad Bridge site ideally include implementation of flood control measures other than Plan 3, Plan 5, or Plan 6, in order to avoid the site completely. If the railroad bridge site cannot be avoided, mitigation minimally should include: 1) in-depth literature search to include review of the files of the Burlington Northern Railroad Company's engineer's office in St. Paul, Minnesota; 2) compilation of an extensive photographic record of the structure; 3) oral history interviews with area residents and/or appropriate Burlington Northern Railroad personnel; and 4) search through old, local newspapers housed at the Walsh County Historical Society in Minto, North Dakota for documentation relevant to the site.

Fieldnotes, photographs and negatives, copies of documentary research results, and other records pertaining to the Grafton flood control cultural resource survey are housed at HASI in Mandan, North Dakota. No artifacts or other specimens were collected from either cultural resource site or from any other location during conduct of this cultural resource survey.

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1. INTRODUCTION

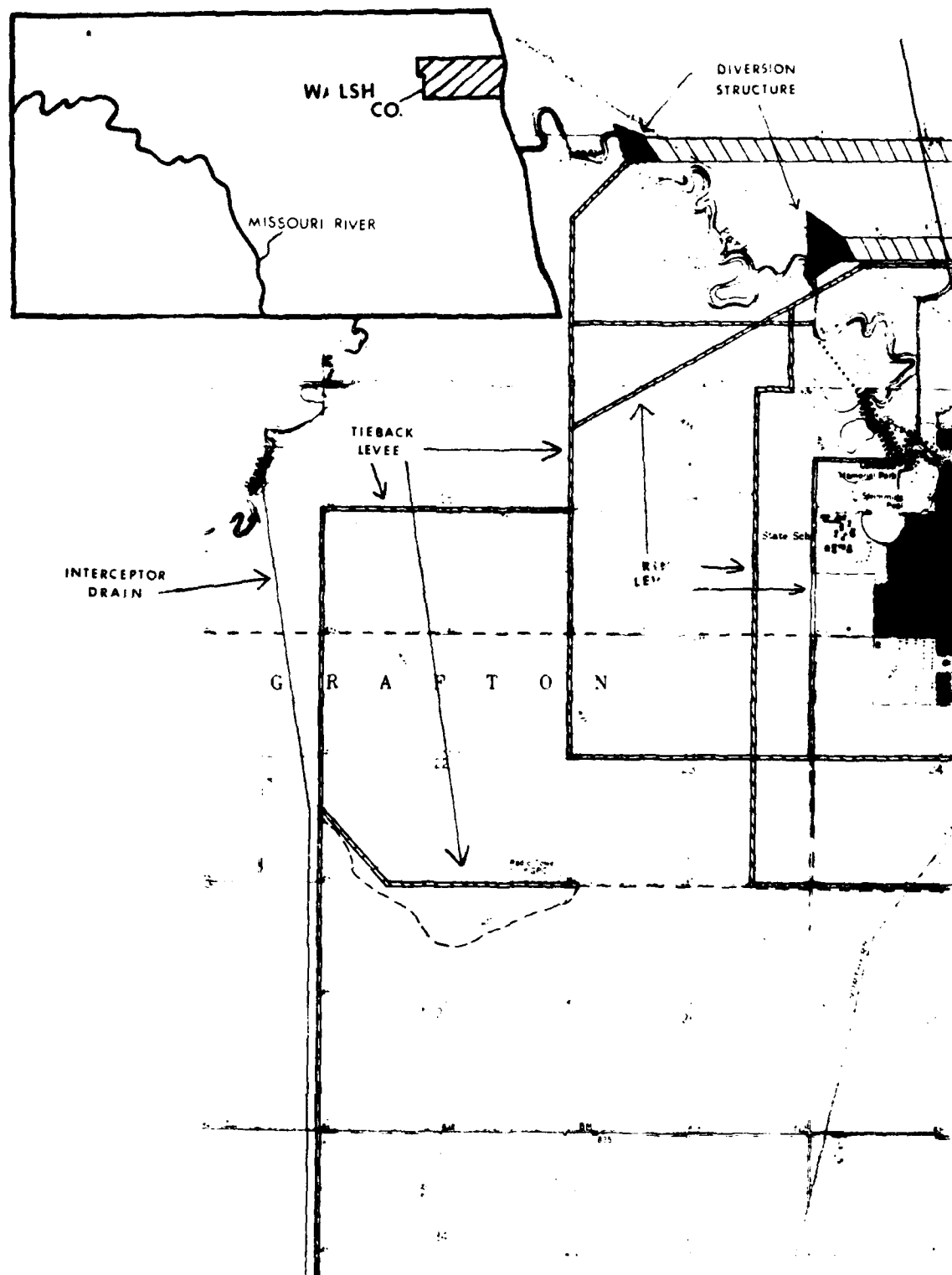
Sponsor of the Grafton Flood Control Project is the St. Paul District, U.S. Army Corps of Engineers (COE). Cultural resource reconnaissance survey was conducted by Historical and Archaeological Surveys, Inc. (HASI)--then of Grand Forks, North Dakota--to assist in COE planning for proposed flood control measures in and around Grafton, North Dakota (Figure 1). HASI subcontracted Historical Research, Inc., (HRI) of Minneapolis, Minnesota, to compile the environmental setting and proto-historic/historic overview sections of this report.

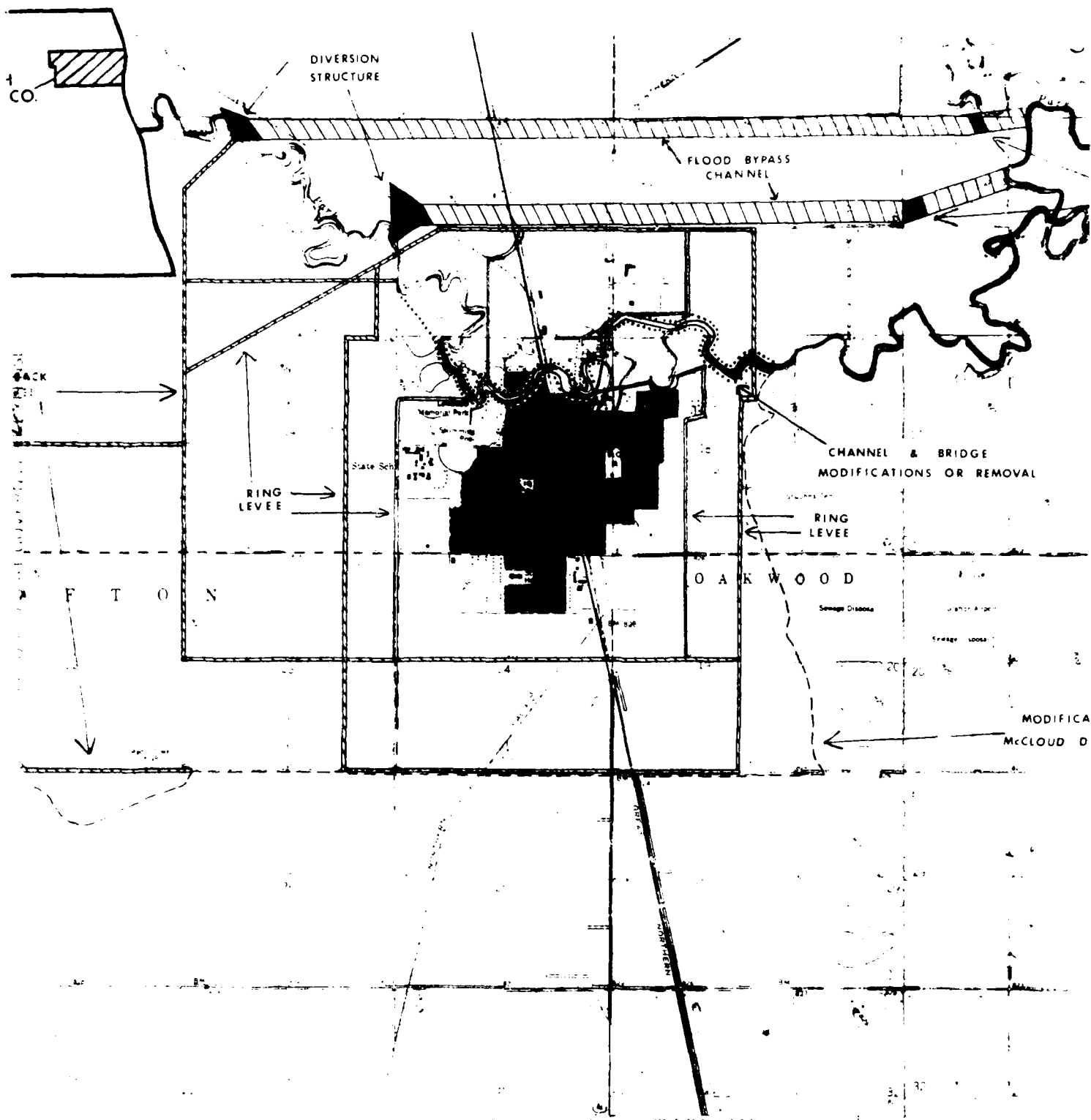
COE flood control goals involve seven types of proposed flood control measures among five alternate plans. Some of the seven types of flood control measures are common to more than one plan, and some right-of-way lines are conterminous (Figures 2 through 6). The seven types of flood control measures include (see the Scope of Work in Appendix I):

- 1) ring levee, 30.5 m (100 ft.) wide survey ROW;
- 2) flood bypass, 152.4 m (500 ft.) wide survey ROW;
- 3) bypass channel, 152.4 m (500 ft.) wide survey ROW;
- 4) interceptor drain, 7.6 m (25 ft.) wide survey ROW;
- 5) tieback levee, 15.2 m (50 ft.) wide survey ROW;
- 6) channel and bridge modification, 15.2 m (50 ft.) survey width on both sides of river channel where proposed, and 61.0 m (200 ft.) survey width at cutoff alignments; and
- 7) ditch modification (McCloud Ditch and associated natural coulees), 15.2 m (50 ft.) on both sides of existing ditch disturbance (30.5 m or 100 ft.) making a total 61.0 m (200 ft.) survey width.

COE cultural resource reconnaissance survey goals at Grafton include:

- 1) inventory of all cultural resources within proposed ROW lines and areas;
- 2) documentary research to obtain historical background data and other information with regard to cultural resources in the Grafton Flood Control Project study area;
- 3) search of pertinent cultural resource site form files and records at the State Historical Society of North Dakota (SHSND) in Bismarck, North Dakota, to determine if any previously recorded cultural resource sites are within proposed ROWS;
- 4) search of National Register of Historic Places (NRHP) files at





DIVERSION
STRUCTURE

FLOOD BYPASS
CHANNEL

RING
LEVEE

CHANNEL & BRIDGE
MODIFICATIONS OR REMOVAL

RING
LEVEE

F T O N

O A K W O O D

MODIFICA
McCLOUD D

Sewage Discharge

WATER ALLEY

SEWAGE DITCH

McCLOUD D

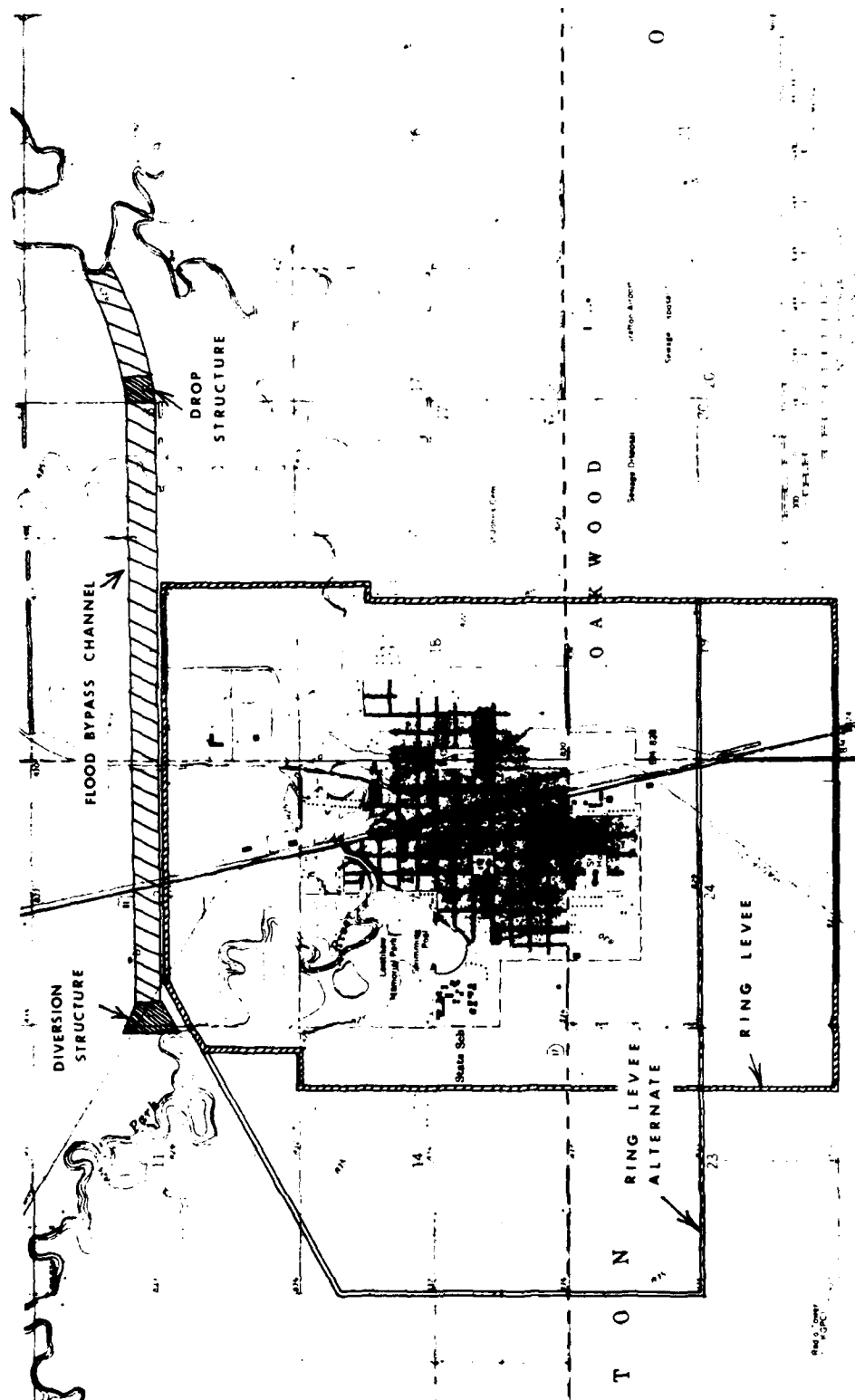
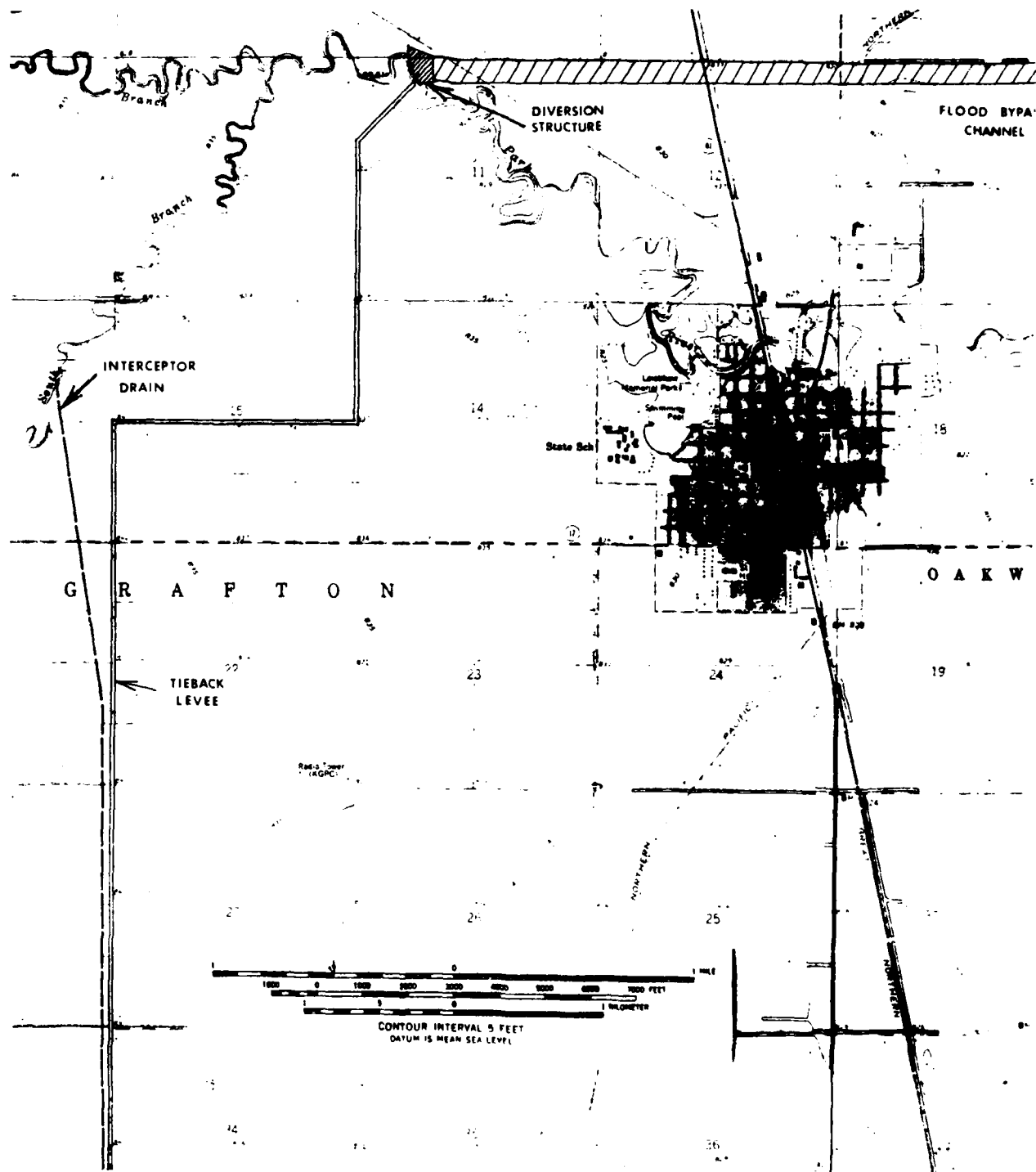


FIGURE 2. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 1. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)



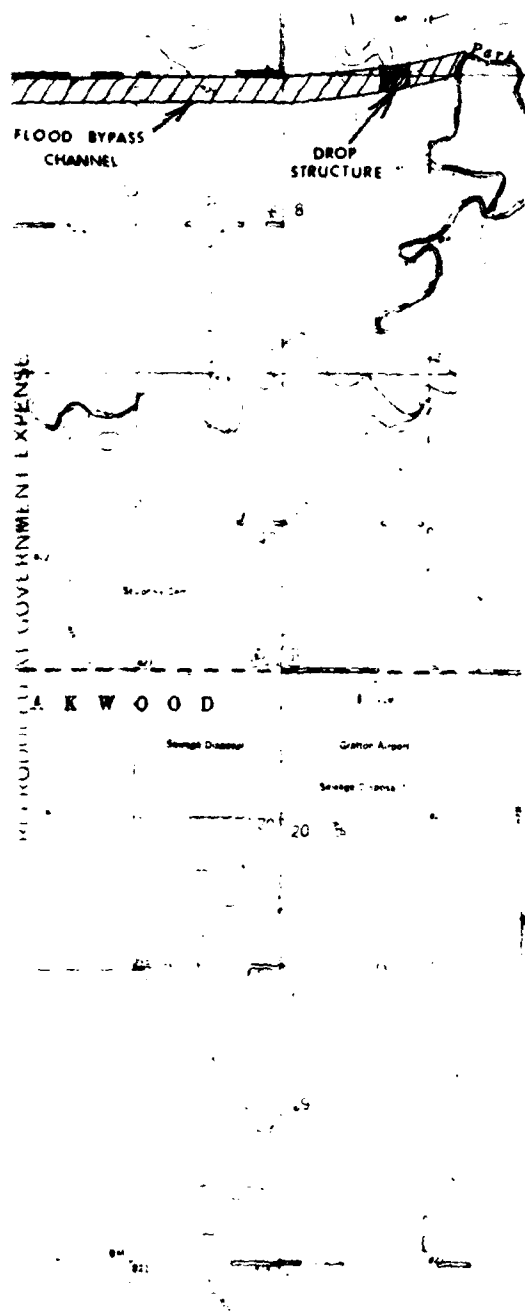


FIGURE 3. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 2. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

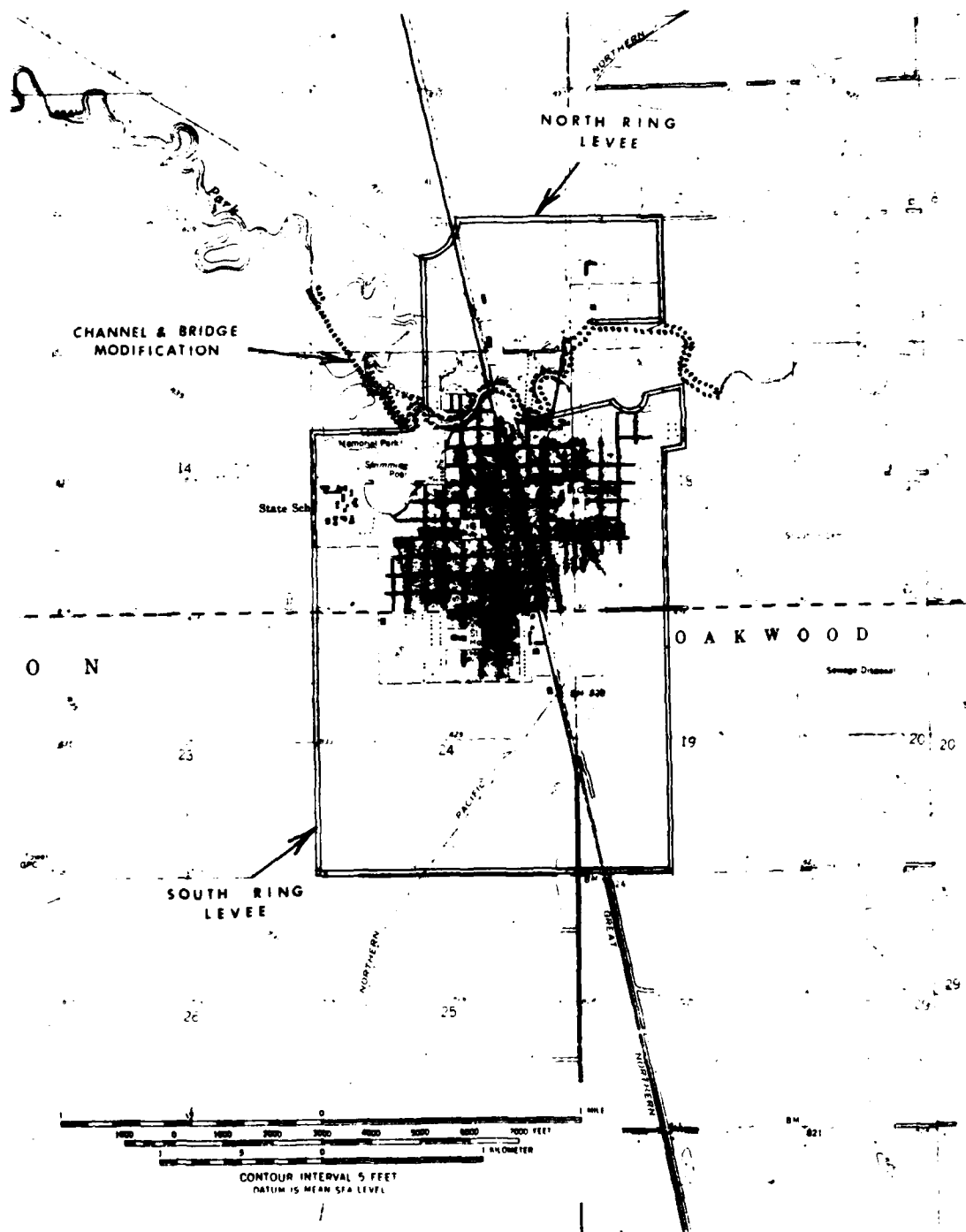


FIGURE 5. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 5. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

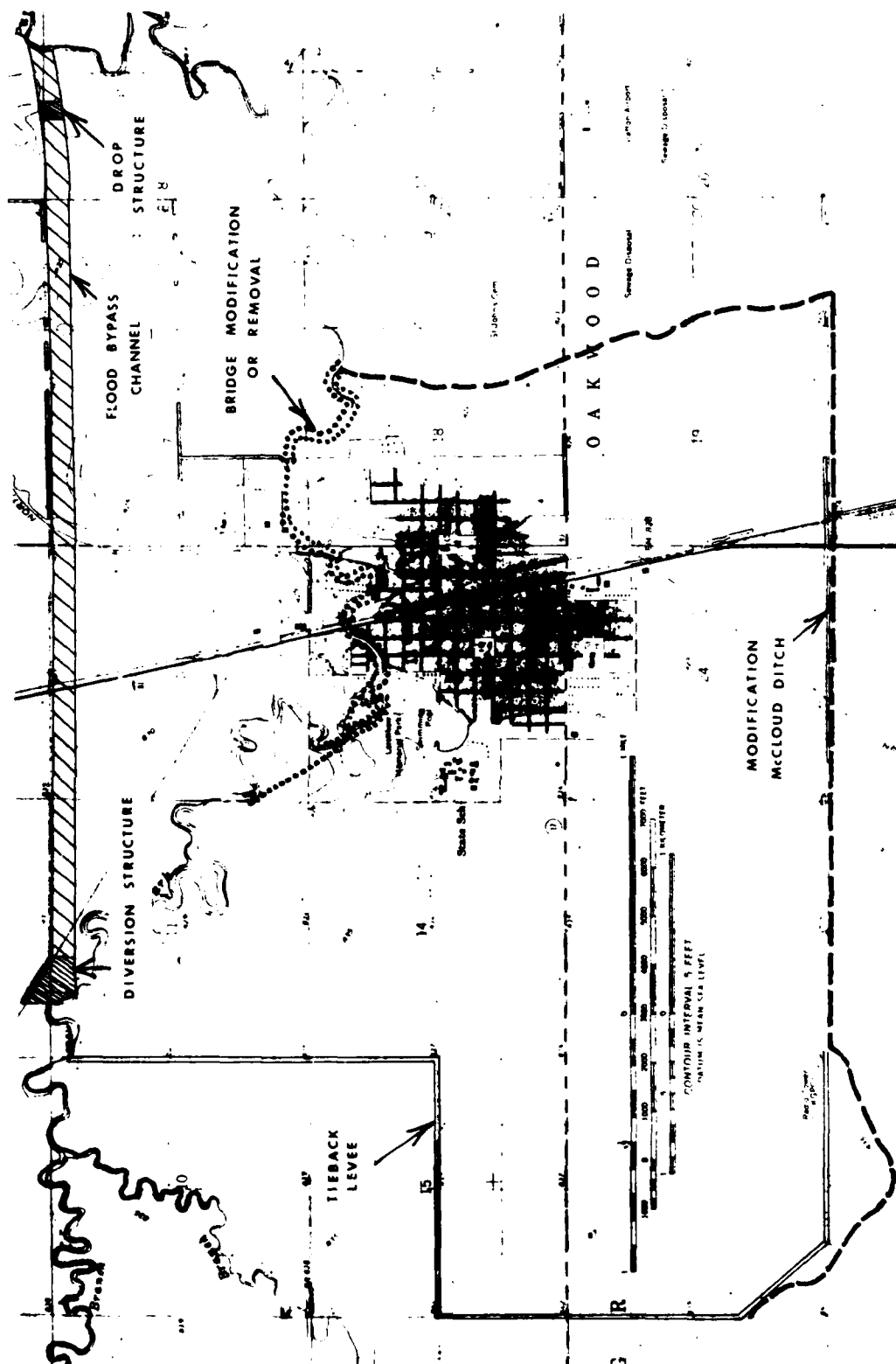


FIGURE 6. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 6. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

the State Historic Preservation Office (SHPO) in Bismarck, North Dakota, to determine if any currently listed NRHP properties will be affected by any proposed flood control measures; and

- 5) obtaining recommendations from professional archeologists (i.e., from HASI) as to possible future research or other appropriate action with regard to cultural resources in the project study area at Grafton.

Previous archeological and historic studies pertaining to the project area and to the general region were reviewed in various sources (see Section 11, List of References). Repositories of these sources include SHSND archives, libraries of the University of North Dakota (UND), and the HASI office library and files. SHSND was consulted about previously recorded cultural resource sites, and the SHPO was consulted about possible NRHP property listings in the Grafton study area during project-related work conducted by HASI in 1981. Data also was obtained from the Walsh County Engineers Office, and from the Burlington Northern Offices in Fargo and Grand Forks, North Dakota, in reference to bridge structures that may exist in and around Grafton. A deeds search was conducted at the Walsh County Courthouse in Grafton, North Dakota, in reference to one of the cultural resource sites recorded during HASI's survey. These latter tasks were completed by HASI in 1982. Data collected from all sources were used in preparation of overviews and in comparative analyses for this project.

Orientation of the literature review was with the city of Grafton and its cultural/environmental setting in relation to the immediate region. General overviews were compiled to give a rounded picture of the study area within the regional context of geography, prehistory, and history. Literature and documents review was ended in late October 1981, after approximately 125 person-hours research previous to compilation of pertinent report sections. The files of the Walsh County Highway Superintendent were examined in order to obtain data about county bridges in and around the Grafton area, in response to review comments received by HASI about the draft project report. The Burlington Northern Railroad Engineers Office in Fargo was contacted for data about bridges in and around Grafton as well.

While evidence of prehistoric occupations of the general Grafton vicinity have been reported in the form of burial mounds and scattered lithic areas, no such evidence was found in the specific survey area. The lure of free or inexpensive farmland brought early settlers to the Grafton area in the late 1870s. The geographic location of Grafton at a natural crossing of the Park River caused the St. Paul, Minneapolis, Manitoba Railroad (later Great Northern) to route its line through the community in 1881. Grafton since has become a commercial and rail shipping center for the surrounding agriculturally-based communities in this portion of the Red River Valley. The dark, rich soils of the Red River Valley have caused it to become a leading producer of potatoes, sunflowers, sugar beets, pinto beans, and small grains.

Reconnaissance survey was a pedestrian, ground surface examination by archeologists James C. Dahlberg and Wayne Roberson of HASI. Survey was conducted on three days during the period 16 to 23 September 1981. Related documentary research was being conducted simultaneously by historian subcontractor Joe Roberts (HRI) of Minneapolis, Minnesota. Larry Sprunk (HASI historian) conducted related files search at the SHSND and SHPO, and James C. Dahlberg conducted related prehistoric literature research. Approximately 68 person-hours were expended conducting ground survey in the Grafton Flood Control project area in 1981. This report, with the exception of the environmental setting chapter (Section 3.0) and the protohistoric and historic overview portions of the regional human occupation chapter (Section 4.0), was compiled by James C. Dahlberg, Michele H. Schreiner, and Wayne R. Roberson. Section 3.0 and the protohistoric and historic overview portions of Section 4.0 were compiled by Dr. Joe Roberts (HRI) under subcontract to HASI; these sections were edited and compiled into final format by HASI personnel.

No previously recorded cultural resource sites are located within any areas proposed for flood control measures, and there are no currently listed National Register of Historic Places properties within any of the five proposed flood control plans. Two cultural resource sites were located and recorded within areas of proposed Grafton flood control measures. These include site 32WA4 (the Plant View Homestead site) and site 32WA5 (the Railroad Bridge site). Site 32WA4 was located and recorded during pedestrian survey conducted by HASI personnel in September 1981. Draft report review comments required that HASI personnel return to the Grafton area in June 1982 to collect data about a number of bridges located along the Park River at Grafton, because these bridges may be affected by proposed flood control measures. Site 32WA5 was recorded by HASI at that time. North Dakota Cultural Resource Survey (NDCRS) site forms were completed for each of these sites, and these are included in Appendix II.

The Plant View Homestead (site 32WA4) lies within the 30.5 m (100 ft.) right-of-way survey width of the ring levee proposed in Plan 1, and the flood bypass channel 152.4 m (500 ft.) right-of-way survey width of the same plan intersects it. Shallow subsurface shovel tests were made at the Plant View Homestead, revealing a rubble of cobble-size concrete chunks to a depth of at least 25 cm (9.8 in.); shovel test forms completed following conduct of these tests are included in Appendix III. The Railroad Bridge site (32WA5) lies within an area that appeared likely to be impacted by channel and bridge modification proposed in Plan 3 and in Plan 5, or bridge modification or removal proposed in Plan 6.

Historical and Archaeological Surveys, Inc., recommends that the documentary research conducted for and the subsurface tests conducted at the Plant View Homestead site are sufficient to determine that this site is not significant, nor is it eligible for inclusion on the National Register of Historic Places; the State Historic Preservation Office has concurred with this determination, and no further work is recommended for this site. The Railroad Bridge site is considered to have the potential for significance, since it represents what may be the only remaining structure of its kind in the Red River Valley. Recommendations

concerning the Railroad Bridge site ideally include implementation of flood control measures other than Plan 3, Plan 5, or Plan 6, in order to avoid the site completely. If the railroad bridge site cannot be avoided, mitigation minimally should include: 1) in-depth literature search to include review of the files of the Burlington Northern Railroad Company's engineer's office in St. Paul, Minnesota; 2) compilation of an extensive photographic record of the structure; 3) oral history interviews with area residents and/or appropriate Burlington Northern Railroad personnel; and 4) search through old, local newspapers housed at the Walsh County Historical Society in Minto, North Dakota for documentation relevant to the site.

Overall purpose of pedestrian survey and this report is to provide data on the existence and nature of cultural resources within proposed flood control ROWS, and to make recommendations based on analysis of gathered data. Data are compiled in logical order, analyzed in proper context, and used to evaluate cultural resources with relation to proposed flood control measures. Recommendations are made through reference to guidelines from the Federal Register (36CFR1202.6--1979) concerning criteria for sites possibly eligible for nomination to the NRHP.

2. PREVIOUS ARCHEOLOGICAL AND HISTORIC STUDIES

No previous cultural resource inventories have been conducted in the specific areas surveyed by HASI through conduct of this project. As with all other portions of the Red River Valley, the first archeological work conducted in Walsh County dealt with examination of burial mounds, often built on top of Glacial Lake Agassiz beach strandlines.

Between 1883 and 1906, Henry Montgomery explored 40 mounds in eastern North Dakota, and he observed hundreds more (Montgomery 1906). Six (6) of the 40 excavated mounds were located in Walsh County. Montgomery excavated at least three mounds in the Fordville Mound Group (now referred to as the Fordville-Blasky Mound Group), located near the Forest River, approximately 4.8 km (3 mi.) west of the community of Fordville and approximately 40.2 km (25 mi.) southwest of the Grafton study area. When Montgomery first visited this mound group in 1883, it consisted of 35 mounds and at least 4 artificial ridges, which apparently connected some of the mounds (Montgomery 1906). In about 1909, construction of the Minneapolis, St. Paul, and Sault Ste. Marie Railroad (now Soo Line) through the center of the mound group caused the destruction of many mounds and portions of three of the ridges (Hlady 1950). The remaining features have been excavated by various researchers, including Jenks and Wilford (date unknown), Hewes in 1947, and Dixon and Hlady in 1949 (Hlady 1950). SHSND conducted excavations at a mound (or more properly, a sand dune relic) during the summer of 1981. This mound is situated on Hutterite land south of Grafton and in Walsh County. The feature contained approximately 28 individuals, most of whom were buried by use of the bundle method (Dill 1982).

Cole (1968) recorded 34 occupation and mound sites along the Forest River in Walsh and Grand Forks counties; the Forest River is located approximately 20.9 km (13 mi.) south of Grafton. The Department of Anthropology and Archaeology, UND, conducted two cultural resource surveys on the Park River. Loendorf and Loendorf (1975) conducted a survey of a proposed dam site on the Middle Branch of the Park River, approximately 32.2 km (20 mi.) northwest of the Grafton study area, in 1974; they recorded two scattered lithic sites and an historic farmstead. Two occupation sites were recorded at the Homme Dam, approximately 32.2 km (20 mi.) west of Grafton by UND during 1974 (Carmichael 1974). During this survey, two burial mounds recorded originally by Coles (1968) were revisited (Carmichael 1974). Loendorf and Good (1974) reported four burial mound sites in addition to those recorded by Cole (1968) during a survey conducted by UND along the Forest River in Walsh and Grand Forks counties in 1974.

In 1977, Loendorf tested one of the occupation sites (32WA400) recorded by UND during their 1974 survey in the Homme Reservoir area (Loendorf 1977). Through results of these tests and through other field examination, Loendorf recommended that the site was not eligible for nomination to the NRHP. During the 1981 field season, Hudak conducted archeological investigations for the COE at the Homme Reservoir, and his investigations resulted in confirmation of Loendorf's (1977) recommendations about site 32WA400 (Hudak 1981).

Montgomery's archeological research methods would not meet today's professional standards; however, it should be noted that he was conducting his research at a time when the study of archeology was in its formative stages. Additionally, Montgomery did collect data, which likely would have been lost to agricultural activities, modern technological and/or improvement activities (i.e., highway and railroad line construction) and pot hunting. As to other researchers who have conducted work in the general area of the Grafton study area, each researcher is an accredited professional and each has reported findings in an acceptable manner.

Montgomery, like most early archeologists, was concerned primarily with discovery and exploration of burial mounds. Lead by such findings, it could be concluded that there are no cultural manifestations other than burial mounds in Walsh and Grand Forks counties. While few in number, more recent studies--i.e., Cole (1968) and Carmichael (1974)--do indicate that other types of cultural manifestations do exist in these counties. However, many mounds have been found along the Forest River and to a lesser extent along the Park River. These mounds often are associated with beach strandlines, and they often occur on bluffs above the river (Carmichael 1974) or at elevations that would permit a good view of the surrounding area. The Grafton study area is located on land with minimal topographic relief, and with no apparent beach strands, which may explain the absence of burial mound features in this area.

3. ENVIRONMENTAL SETTING

3.1 GEOLOGY AND PHYSIOGRAPHY

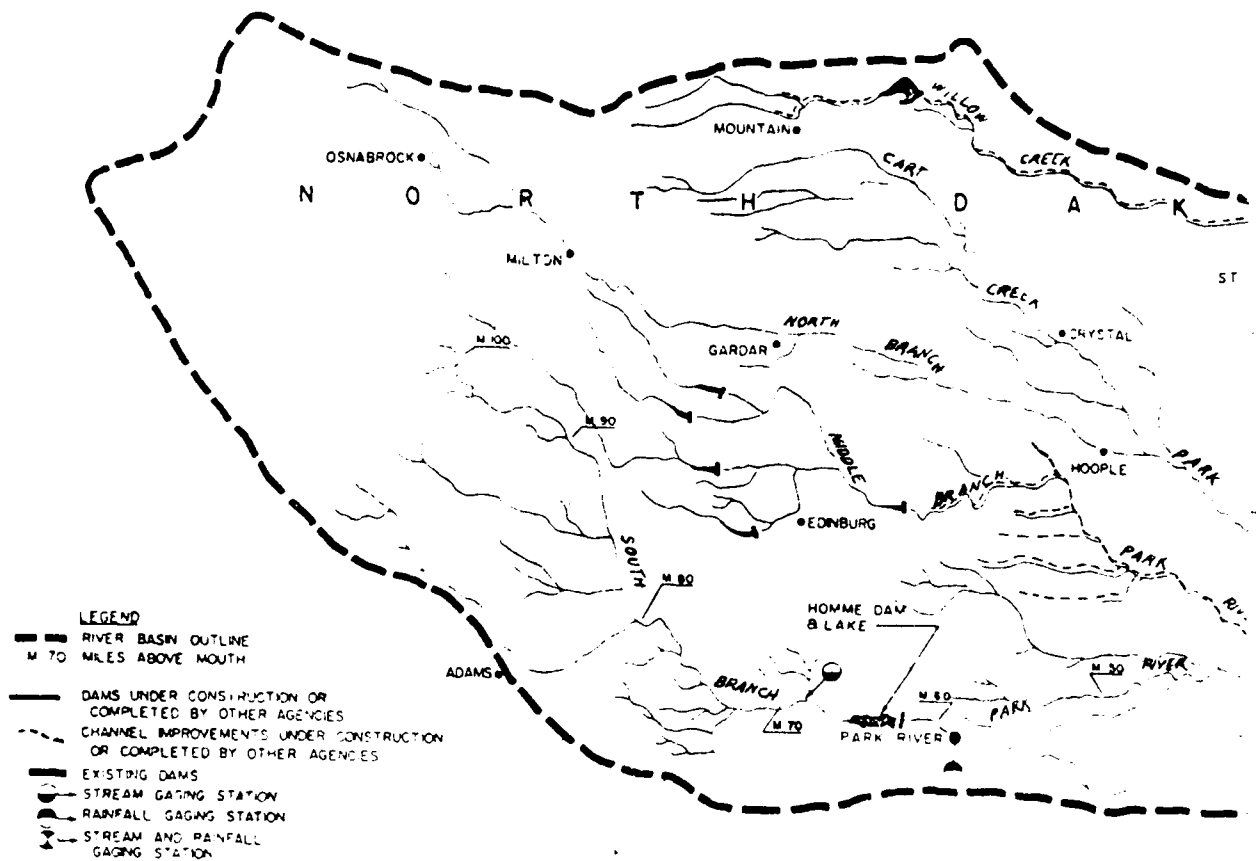
Grafton is located in central Walsh County in northeastern North Dakota, approximately 19.3 km (12 mi.) west of the Red River of the North and approximately 64.4 km (40 mi.) south of the Canadian border. It is located in the Park River Subbasin, on the main channel of the Park River, some 3.2 km (2 mi.) or 4.8 km (3 mi.) east of the confluence of the North, Middle, and South branches of the river (Figure 7). The Park River Subbasin drains some 1,609.0 km (1,000 mi.) of land surface, and the Park River flows into the Red River, which flows northward through the Red River Valley to the Hudson Bay drainage system. The Park River Subbasin includes three physiographic regions, which include the Drift Prairie (on the west), the Pembina Escarpment transition zone, and the Lake Plain (which is the old bed of Glacial Lake Agassiz).

Glacial Lake Agassiz was formed in front of the Wisconsin Glacier, and it covered an enormous area, which included the present Red River Valley. It compared in size with the present Great Lakes system. Remnants of Lake Agassiz present exist as Lake Winnipegosis, Lake Manitoba, Lake Winnipeg, Lake of the Woods, and many smaller lakes. Variations in climate, glaciation, and outlet flow caused Lake Agassiz to stabilize at various levels through time. This stabilization along with wave and wind action created beach strandlines and the Pembina Escarpment.

This escarpment is an east-facing scarp that contained the western limits of Lake Agassiz. The scarp was caused because a hard layer of shale overlaid a softer layer of shale. Wave action and glacier movement eroded the softer layer more quickly than they did the hard layer, which resulted in a more or less sheer face (Bluemle 1975). Most of the beach strandlines are concentrated in the escarpment, but they also occur on the Lake Plain, and some are located near Grafton to the east and to the west. The strandlines east of Grafton are part of the Burnside strandline (Bluemle 1973), and they appear as slight undulations in Sections 8, 17, 20, 29, and 32, T157N, R52W. The only portion of the strandline likely located within any proposed flood control areas is that area in Section 8, T157N, R52W; this area includes the proposed flood bypass channel (Figures 1, 2, and 3). No cultural material was observed in association with this strandline during field survey.

The bedrock geology of the region of the study area includes the Ordovician age Winnipeg, Stormy Mountain, and Red River formations, which are composed principally of limestone (Figure 8). The Jurassic age rocks are "red beds" of shale, siltstone, and sandstone. Cretaceous formations include the undifferentiated Lakota and Fall River formations; the Skull Creek, Newcastle, and Mowry formations (undifferentiated shale and sandstone); and the Bell Fourche, Greenhorn, and Carlile formations, which are undifferentiated and are composed principally of shale (Noble 1973).

Pleistocene formations in the Grafton area include approximately



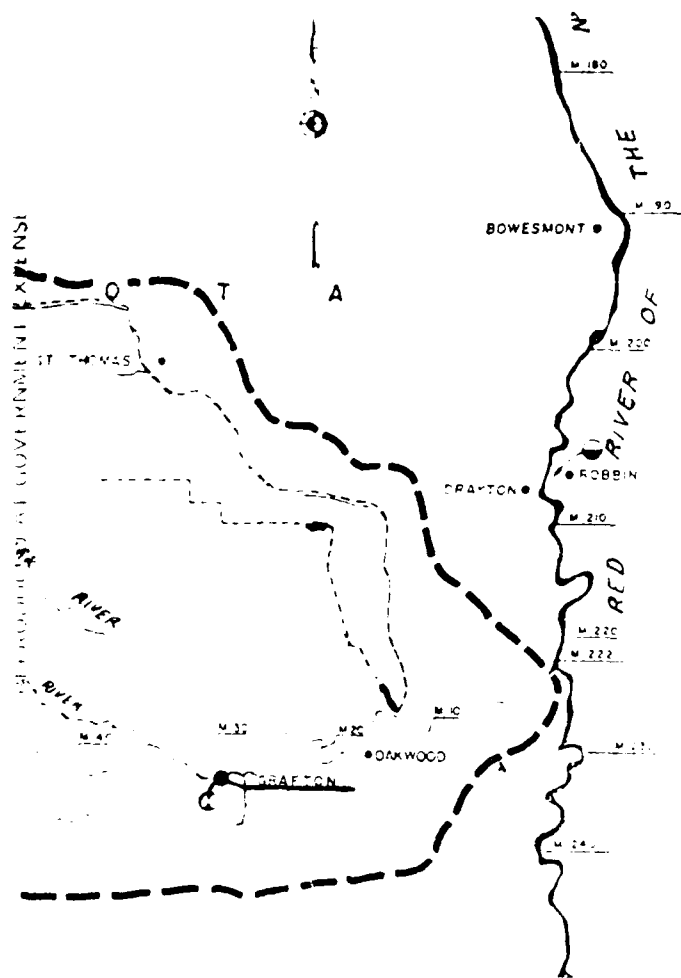


FIGURE 7. Park River Subbasin. (Source of map: COE 1973)

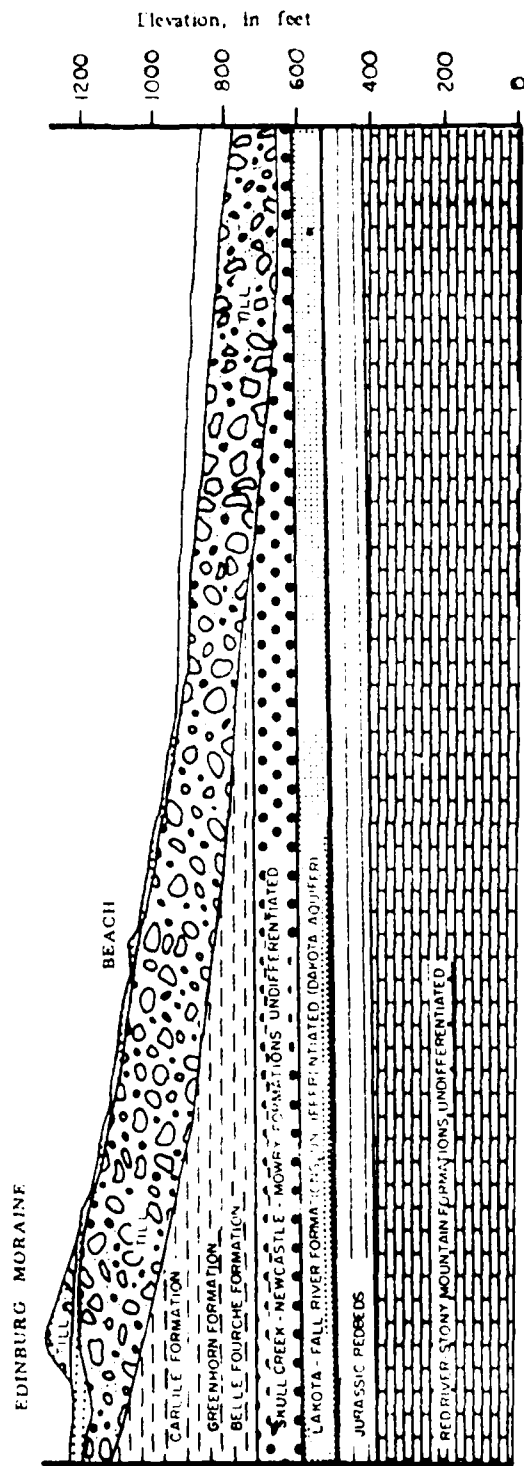


FIGURE 8. Generalized Geologic Cross-Section through Northern Walsh County, North Dakota. (Source: Bluemle 1973)

61.0 m (200 ft.) of glacial till and a surface formation (roughly 30.5 m or 100 ft.) of lacustrine deposits of silt and clay (Figure 8). A large, diamond-shaped modern floodplain, which surrounds the three branches of the Park River, is situated west of the Grafton study area. A floodplains as much as 1.6 km (1 mi.) wide also extends along and out from the river channel east of the confluence of the three branches. Colluvial deposits on these floodplains are sandy gravel or gravelly-sand (BlueMLE 1972). These floodplains are inundated frequently, which suggests that a relatively large degree of disturbance may have been caused to prehistoric cultural manifestations by erosion and deposition.

Salt water percolates up from the Dakota Aquifer situated east of the study area, which results in a salt marsh or slough known as Salt Lake. The Park River also is affected by salt water, and it is salty east of the study area (BlueMLE 1975).

3.2 SOILS

Soils of the general Grafton area are highly fertile silty loam and silty clay loam lake bottom deposits; well over 90 percent of the land around Grafton is under cultivation (Soil Conservation Service 1972, Jelleberg 1981). Most wetlands indicated on historic maps have been drained and converted to agriculture (Soil Conservation Service 1972), and about one-half the agriculture land in the Grafton area supports row crops (i.e., potatoes and sugar beets). The other one-half of the land in the Grafton area supports crops of small grains (Jelleberg 1981).

The level of cultivation and urban use in the study area indicates a very high probability that prehistoric cultural resource sites in the study area have been disturbed, unless they exist below the plow zone.

3.3 CLIMATE

The climate of the study area is subhumid continental, with a normal annual rainfall of 55.9 cm (22 in.). Winter snows tend to melt rapidly in March, first in the river valley and about 10 days later on the Drift Prairie. The combined runoff usually taxes the drainage system of the Park River Subbasin (Bell 1963).

Weather in the area usually is cool until mid-May, although summer temperatures may reach 40.8° C (105° F). Winter temperatures vary from -43.1° C (-45° F) to -6.7° C (20° F), and thaws are common in January and February (Bell 1963).

3.4 FAUNA

Prehistoric fauna of the Grafton region are suggested by MacNeish's (1958) list of animal remains recovered from Red River Valley archeological sites. These faunal specimens include skeletal remains from bison, hare, woodchuck, chipmunk, squirrel, beaver, muskrat, porcupine, dog, fox, bear, martin, fisher, mink, otter, lynx, moose, and numerous species of birds and fish.

Before Euro-American settlement, the tall grass prairie that characterized the region supported bison, elk, prairie chicken, duck, and pheasant. East of the Red River, in Minnesota, the forested zone supported moose, deer, and elk (Kelsey 1951). Wood (1971) describes bear, wolf, otter, fox, racoon, beaver, bison, muskrat, swan, and eagle as indigenous to the study area.

3.5 FLORA

The Lake Agassiz plain is a lowland transition zone between upland forest (to the east) and upland prairie (to the west). The vegetational history of the basin, synthesized by Shay in 1967, has been reconstructed without much data from the central portions of the basin. The paleobotanical data, however, do permit a processual history of the period beginning about 12,000 years ago. From the period 12,000 to 10,000 years before present, the uplands were covered with boreal forest, which was dominated by spruce in the earlier part of the period and by pine and deciduous trees in the latter part. These forests also contained larch, balsam, poplar, ash, cedar, paper birch, and fir (Shay 1967). Around 9,900 to 9,100 years before present, the boreal forest disappeared and there was a change to postglacial-type vegetation. From about 9,000 to 7,000 years before present, the vegetation of the region became increasingly modern (McAndrews 1967).

The modern vegetation of the Grafton area consists of tall grasses, which are dominated by western wheatgrass, big bluestem, and needlegrass (COE 1973), with forest belts along watercourses. These forest belts are comprised of deciduous species, such as box elder, ash, oak, aspen, basswood, ironwood, American elm, cottonwood, willow, birch, and maple (Shay 1967). Since Euro-American settlement in the region (which occurred in the later decades of the 19th century), the natural vegetation of the area has given way to cultivated floral species.

4. REGIONAL HUMAN OCCUPATION

4.1 PREHISTORIC OVERVIEW

The Grafton, North Dakota, survey area lies within the Northeastern Periphery spatial archeological subdivision (Wefel 1961). The study area is located between the Middle Missouri subarea (to the west) and the extreme western edge of the Eastern Woodland (to the east). The Park and Forest river valleys, in North Dakota, and the Red and Pembina river valleys, in North Dakota and southwestern Manitoba, are included in the Northeastern Periphery in the general Grafton area.

The prehistory of the Northeastern Periphery is understood poorly, particularly in northeastern North Dakota where professional archeological investigation has been scant. However, considerable archeological work has been conducted in eastern North Dakota and southern Manitoba, including work conducted in the Rock Lake area of the Pembina River in southwestern Manitoba, particularly at and near the Avery site (Hlady 1970); the Jamestown and LaMoure-Oakes areas of the James River Valley (Good et al. 1976; Good et al. 1977a,b; Schneider 1977; Vehik 1976; Wheeler 1963); and areas along the Sheyenne River Valley (Kivett 1948; Hewes 1949; Strong 1940; Wood 1971); as well as work conducted around Devils Lake (Montgomery 1906; Cooper 1947; Mallory 1966). To form a cultural history of the vicinity of the study area, data collected from surrounding regions has been synthesized and combined with findings from the Grafton area. The following discussions are limited to the Northern Great Plains, with an emphasis on sites located in eastern North Dakota. Where necessary, the discussions have been expanded to include archeological findings from western North Dakota, western Minnesota, and southern Manitoba.

The prehistoric culture of the Great Plains has been divided into major categories called periods. These include: Paleo-Indian (at least 10,000 B.C. to 6000 B.C.); Plains Archaic (6000 B.C. to about A.D. 1); Plains Woodland (500 B.C. to A.D. 900); Plains Village (A.D. 900 to A.D. 1780); and Plains Nomadic (A.D. 500 to the historic period). There is growing evidence that late Woodland developments may have been present in the Northeastern Periphery well beyond the aforementioned A.D. 900 date, and they may have existed up to historic times (Syms 1970).

4.1.2 Paleo-Indian

Paleo-Indian (at least 10,000 B.C. to 6000 B.C.) subsistence was based primarily on exploitation of herds of big game animals, popularly referred to as megafauna. Much of this megafauna consisted of presently extinct forms of bison, as well as mammoths and animals which now are extinct in North America (e.g., various species of horses and the camel). Smaller game and plants probably were exploited as well. While settlement was in small, temporary campsites, hunting megafauna was a communal effort, involving large numbers of people. Most Paleo-Indian sites recorded to date have been large kill sites; however, a few small Paleo-Indian campsites have been discovered (Frison 1978).

Artifacts associated with Paleo-Indian sites typically are well-made, consisting of distinctive lanceolate projectile points, knives, choppers, and scrapers. Point types include the fluted Clovis (Llano Complex), Folsom and possibly Midland (Folsom Complex), and a variety of point types such as the Alberta, Plainview, Scotts Bluff, Eden Valley and Hell Gap (Plano Complex). A private collector from Sheyenne, North Dakota--on the Sheyenne River, approximately 120.7 km (75 mi.) southwest of the Grafton study area--claims to have found a fluted point on the ground surface near Sheyenne (Schneider 1981). Johnson (1962) states that private collectors have reported Folsom point finds along the James and Upper Sheyenne Rivers and also along the Sheyenne Delta of Lake Agassiz. From Johnson's (1962) descriptions, these latter find areas probably were located 8.1 km (5 mi.) to 32.2 km (20 mi.) east of Enderlin, North Dakota (about 185.0 km or 115 mi. south of Grafton). In 1978, Michlovic, Moorhead State University, found an Agate Basin point on the surface in the Red River Valley near Glyndon, Minnesota (approximately 193.1 km or 120 mi. south and slightly east of Grafton) (Michlovic 1979).

An apparently early type point of the Plano Complex (Alberta point) was found near the Manitoba community of Manitou (Pettipas 1970), located in the Pembina Hills, approximately 128.7 km (80 mi.) northwest of the study area. Another Alberta point reportedly was found near the town of Ninette, on the shore of Pelican Lake (Pettipas 1970). This lake, which feeds the Pembina River, is located approximately 193.1 km (120 mi.) northwest of the study area. A Hell Gap point was found in the Glenora District, near Rock Lake and on the Pembina River in Manitoba, approximately 144.8 km (90 mi.) northwest of the study area (Pettipas 1970).

4.1.2 Plains Archaic

During the Plains Archaic Period (6000 B.C. to about A.D. 1), a decline in big game dependence, probably created by the extinction of the Pleistocene megafauna, brought a shift toward reliance on small game and vegetal food stuffs. Smaller game included deer, antelope, rabbits, birds, reptiles, and mussels. The high incidence of grinding stones and the frequency of fire-cracked rock--probably representing roasting pits--are indicators of increased reliance on floral materials as supplements to meat diets.

Chipped stone artifacts generally were less well-made than those of the Paleo-Indian Period, and include projectile points, knives, and scrapers. Pecked and ground stone axes, milling stones, handstones, and atlatl weights became more numerous during the Plains Archaic Period. Bone awls, needles, tubes, fishhooks, and shell beads also are more in evidence during the Plains Archaic Period. Occupation areas, like those of the Paleo-Indian Period, were small encampments. Some locations show a steady occupation, while others appear to have been seasonal, intermittent occupations, and it was during the Plains Archaic Period that stone circles first made their appearance on the Northwestern Plains (Frison 1978).

The most fully-reported Archaic sites in the Northeastern Plains

area belong to the McKean Complex. This complex is represented by the McKean Lanceolate point type and by the stemmed Duncan and Hanna point types. The majority of archeologists also include the large eared (concave-based and side-notched) Oxbow point type. Husted (1969) believes that the McKean Complex represents spear or lance points used by hunters who moved down from the foothills of the Rockies as the exceedingly dry conditions of the Altithermal improved more than 5,000 years ago.

The first radiocarbon-dated McKean (Middle Archaic Period) component in North Dakota was discovered at the Red Fox site, which is located in the southwest corner of the state; occupation "4" at this site has been dated at 3,770 BP \pm 90, in association with Duncan-type projectile points (Syms 1969). The Lightning Spring site, located in the northwest corner of South Dakota and less than 30 km (19 mi.) from the Red Fox site, yielded four radiocarbon dates which ranged from 4,190 BP \pm 110 to 3,430 BP \pm 270, and again were in association with Duncan-type projectile points (Keyser 1982).

Recent cultural resource investigations along or near the Little Missouri River in the North Dakota Badlands areas in Dunn, McKenzie, and Billings counties have resulted in location of numerous Archaic components (Leaf 1976; Kuehn 1982; East et al. 1981; Loendorf et al. 1982; Simon and Borchert 1981a,b). An isolated project point found on the surface near Underwood, North Dakota, has been identified as a Hanna point (HASI 1981); Underwood is located just east of the Missouri River, approximately 241.4 km (150 mi.) southwest of Grafton.

There is a concentration of McKean Complex points around the shore of Rock Lake in southwestern Manitoba. McKean points have been found at the Lake Shore site, which is located about 150 m (492 ft.) south of the Avery site (Vickers 1949) and approximately 144.8 km (90 mi.) north of Grafton. McKean points also were found during excavations at the United Church site, about 0.4 km (0.25 mi.) west of the Avery site (MacNeish and Capes 1958). The earliest known occupation of the Avery site appears to be represented by Duncan and Hanna type points. Joyes (1970) tentatively estimates the McKean occupation of the Lake Shore site at 1750 B.C., the McKean occupation of the United Church site is estimated at a slightly later date, and the Duncan-Hanna occupation of the Avery site is estimated at about 1500 B.C. to 1000 B.C. The terminal date of the McKean Complex has been set at about 1000 B.C., or perhaps as late as 600 B.C., in the marginal Canadian Plains (Syms 1970).

Campsites of the McKean-Duncan-Hanna Phase are small, and they apparently were occupied briefly by small groups. At Rock Lake, the small, temporary camps and the inferred bison hunting subsistence pattern would suggest presence of small nomadic bands (Joyes 1970). The McKean-Duncan-Hanna Phase was being replaced by the Pelican Lake Phase over much of the Northern Plains by approximately 1000 B.C. Joyes (1970) believes that the Pelican Lake Phase was indigenous, having grown out of the McKean component, at least in some parts of the plains.

The Pelican Lake Phase is represented most commonly by large

corner-notched points, but it is associated with large unnotched points on some occasions. Both point types are pre-bow; however, atlatls or spear throwers appear to have been in use throughout this phase (Reeves 1970). Another isolated project point found on the surface near Underwood was identified as a Pelican Lake Phase point (HASI 1981). Fourteen (14) Pelican Lake Phase points were recovered from the Avery site (Joyes 1970). Joyes (1970) estimates that the Pelican Lake Phase occupation of the Avery site occurred between 500 B.C. and A.D. 1. Pelican Lake Phase points also have been reported from the Calf Mountain and Shewfelt sites in Manitoba. Both these sites are situated in the Pembina Mountains and within 96.5 km (60 mi.) north of the Grafton study area.

Pelican Lake Phase peoples appear to have been specialized big game hunters, who concentrated on bison. No ceramics have been found in association with Pelican Lake Phase sites, and campsites from this phase are not extensive (i.e., they suggest occupations by small groups). There is evidence that associates some people of the Pelican Lake Phase with habitation in tipi or tipi-like structures (Reeves 1970). Joyes (1970) theorizes that these people existed in nomadic bands, which probably coalesced into large groups for seasonal bison hunts. Pelican Lake Phase people definitely had developed the technique of taking bison in pounds and jumps (Reeves 1970).

At least three radiocarbon dates are known for Pelican Lake occupations of the Head-Smashed-In Bison Jump in southeastern Alberta. The Long Creek site in southeastern Saskatchewan (approximately 321.9 km or 200 mi. northwest of Grafton) contains a large Pelican Lake component, which was dated at around 700 B.C. (Wettlaufer and Mayer-Oakes 1960). A Pelican Lake component also is present at the Mortlach site in south-central Saskatchewan (Wettlaufer 1955). Michlovic (1981a) found evidence of a buried Archaic component while testing a site on the Red River, near Hendrum, Minnesota; Hendrum is located about 128.7 km (80 mi.) south and slightly east of Grafton. Subsequent excavation at the site revealed presence of an Oxbow or Oxbow-like point associated with a fire stain that dated in excess of 4,000 years before present (Michlovic 1981b). Michlovic (1979) believes that the Oxbow Phase of the Archaic Period represents eastern affiliations, at least in that portion of the Red River Valley.

4.1.3 Plains Woodland

Very little is known about the Plains Woodland Period, which existed from approximately 500 B.C. to A.D. 900. The most visible Woodland traits in the Northeastern Periphery are burial mounds and the physical remains indicative of the introduction of ceramic vessels. There is growing evidence that Plains Woodland peoples supplemented their diets of wild game (predominantly deer and bison) and wild vegetal food stuffs with cultivated crops. Remains of semi-permanent house structures suggest a semi-permanent way of life.

Although the area Woodland peoples left in coming to the plains area is not understood clearly, various human populations and associated events may have occurred in and around the area during the Plains

Woodland Period. The following is a presentation of various theories and archeological evidence about the Woodland Period; however, it does not include archeological interpretations.

Archeological evidence of occupation by early Woodland Period (500 B.C. to A.D. 1) peoples is totally lacking west of the Red River; rather, it appears that the Mississippi River forms the main western boundary of the early Woodland movement (Syms 1977). An early Woodland component is reported, however, at the Graham Lake Mound site I in west-central Minnesota (Johnson 1969).

The earliest dated burial mound in North Dakota (site 32BA1, Mound A) was found north of Valley City (Kivett 1948, Hewes 1949), approximately 161.0 km (100 mi.) southwest of Grafton. This mound has a radiocarbon date of A.D. 90 \pm 150 (Neuman 1975). Joyes (1970) suggests that projectile points associated with site 32BA1 represent the Besant Phase, and recent research has placed the site in the Sonota Burial Complex (Neuman 1975). Whether the manufacturers of Besant tools also are responsible for construction of Sonota Complex burial mounds has not been determined definitely. A discussion of the Besant Phase, and the Sonota and Arvilla burial complexes is provided below.

The Besant Phase, which appears to be restricted geographically to the Northern Plains, first began to appear in the Middle Missouri Region in or about A.D. 1 (Neuman 1975). This phase is characterized by side-notched points of greatly varying sizes. A marked preference for use of Knife River flint in manufacture of these points and in manufacture of associated tools is noted (Reeves 1970). The Besant Phase is viewed as a time of great transition in the Northern Plains. It is during this time period, and in apparent association with Besant point types, that pottery first appeared in the region, and sometime between A.D. 1 and A.D. 800, the atlatl was replaced by the bow and arrow on the Northern Plains (Reeves 1970).

The source of the Besant Phase is not understood clearly. Reeves (1970) believes it to be a separate Plains-adapted cultural tradition, which had been resident in the Northeastern Periphery since late Archaic or early Woodland times (1000 B.C. to 500 B.C.); Husted and Mallory (1967) favor the Boreal Forest of the north. The hypothesized termination date for the Besant Phase is around A.D. 900 (Reeves 1970).

A radiocarbon date of A.D. 300 \pm 50 was taken from a hearth, apparently associated with a Besant point, at the Sunday Sage site in the North Dakota Badlands (Simon and Borchert 1981b). The Besant Phase is well-represented at the Avery site, where this occupation has been estimated at A.D. 300 to A.D. 500 (Joyes 1970). Joyes (1970) believes that Besant type points at the Avery site are associated with Avery Corded pottery ware and that the Besant Phase may be derived from the Woodland tradition cultures to the southeast. He also hypothesizes that the apparent scarcity of Besant pottery on the northwestern Plains may be the result of a population, which gradually discontinued making pottery as they moved farther out onto the plains.

There is some evidence to indicate that--compared to human population during the Pelican Lake Phase--there may have been an increase in human population in the Northern Plains during Besant times (Joyes 1970). In southwestern Manitoba, "Besant Phase campsites appear to represent fairly lengthy or repeated occupations by moderately large groups. Nomadic bands were probably the rule as far as social organization was concerned, with seasonal multi-band groupings for communal bison hunts" (Joyes 1970). Apparently nothing is known about Besant Phase habitation structures in southwestern Manitoba. In Alberta, tipi rings have been associated with both summer and winter campsites of Besant tool makers (Reeves 1970). At the Mortlach site (Wettlaufer 1955), in south-central Saskatchewan, a post-mold pattern was found which is very similar to those from a Woodland-type structure at the LaRouche site on the Missouri River in central South Dakota (Hoffman 1968).

The Sonota Complex is based primarily on observations and analyses of excavated materials from a number of apparently related burial mound sites. The majority of these sites are located in North Dakota, South Dakota, and southern Manitoba. Neuman (1975) defines the complex as displaying: 1) an important emphasis on bison use; 2) a predominance of tools made from Knife River flint; 3) upright bones in village and kill sites; 4) small burial mounds containing numerous bison remains, as well as multiple bundle burials; and 5) a distinctive variation of corner-notched projectile points that subsume Besant and Samantha side-notched types.

Long, domed mounds characteristic of the Sonota Complex average 22.9 m (75 ft.) in diameter, 0.8 m (2.5 ft.) to 0.9 m (3.0 ft.) in height, with rectangular central pits lined or partially lined with logs. Burial goods include distinctive pottery types, diagnostic corner-notched projectile points, graveurs, knives and worked flakes. Occasional offerings include obsidian scrapers and bifaces, beads made from exotic materials, bear canines, imitation bear canines, and a shell thunderbird (Neuman 1975).

Among Sonota Complex sites recorded in North Dakota are 32BA1 (near Valley City); the Schmidt Mound site (32M020, south of Bismarck); and the Boundary Mounds site (32SI1), Alkire Mound (32SI200), and Porcupine Creek Component (32SI6, an occupation site), all located on the Missouri River and just north of the North Dakota/South Dakota border. Other sites assigned to the Sonota Complex, including the Stelzer Village site, are located along the Missouri River near Mobridge and south of Pierre, South Dakota (Neuman 1975). A series of Sonota Complex sites in the Killarney Locality of the Pembina Valley region in southern Manitoba (approximately 161.0 km--100 mi.--northwest of Grafton) have been reported by Syms (1977), along with the Richards Kill and Richards Village sites in southwestern Manitoba. Syms (1977) also places the High Butte site (32ME13), in Mercer County, and the Indian Hill site (32M222), near Williston but located in McKenzie County, in the Sonota Complex.

Dates for the Sonota Complex cluster between 100 B.C. and A.D. 1000 at one standard deviation, and 1 A.D. to 800 A.D. if the central dates are considered (Syms 1977). Neuman (1975) and Syms (1977) basically

agree that the Sonota Complex reflects derivations transmitted westward by Woodland Hopewellian societies, known primarily from sites recorded east and southeast of the north-central Plains. One factor in the diffusion that Neuman (1975) sees as being both directly and indirectly transmitted is the accessibility of the Sonota people to Knife River flint and grizzly bear teeth. Joyes (1970) apparently sees a direct relationship between what now is referred to as the Sonota Complex and the Besant Phase. Neuman (1975) points to parallels in the two cultures, such as similar subsistence bases and contemporaneous site dates, but apparently does not feel they represent the same people. Syms (1977) places the Sonota Complex and the Besant "Horizon" into what he terms the early Village, as opposed to middle Woodland, Configuration. Based on what he perceives as differences in projectile point morphology, choice of raw materials, and categories of tools, Syms (1977) believes that Sonota and Besant represent separate units.

The Arvilla Complex is based solely on the consistent, re-occurring patterns of a number of burial mound sites in a geographic area extending from the St. Croix River Valley in east-central Minnesota, west to the Red River Valley, north along that river to the Pembina Plain, and to the Winnipeg area (Johnson 1973). Some of the mounds at the Fordville Mounds site along the Forest River in Walsh County have been placed in the complex, as well as the Arvilla Mounds on the Turtle River in Grand Forks County (Johnson 1973). The Fordville Mounds site is located approximately 40.2 km (25 mi.) southwest of Grafton, while the Arvilla Mound site is situated about 56.3 km (35 mi.) south.

Major traits of the Arvilla Complex include: 1) linear and circular mounds; 2) subsurface burial pits; 3) frequent use of yellow and red ocher; 4) flexed and disarticulated primary and bundled secondary burials; 5) associated utilitarian and ornamental grave goods, dominated by bone and shell artifacts, prairie side-notched and broad side-notched projectile points, blade side scrapers of brown chalcedony, and mortuary vessels of St. Croix-stamped or Blackduck ware (Johnson 1973). The Arvilla Complex contains an artifact assemblage that is northern, and the intrusion of marine trade goods of southern origin should not obscure that fact (Johnson 1973). No single trait is restricted to this complex; it is the particular, consistent, re-occurring combination of the above traits that makes it distinctive. The Arvilla Complex developed rapidly about 500 A.D. to 600 A.D. and disappeared in the southern portion of its geographic area by A.D. 900; however, it may have continued for several centuries in the Red River Basin in Manitoba (Johnson 1973). Syms (1979) believes that the Arvilla Complex persisted until approximately A.D. 1400.

There is growing evidence that Woodland or Woodland-like traditions persisted in the Northeastern Periphery possibly to historic times; these peoples probably lived in Plains-adapted, localized groups. Michlovic (1979, 1981a,b) has discovered ample evidence of late Woodland manifestations in the Red River Valley region of Minnesota, and similar evidence has been found along the James River (Good et al. 1977a). However, there presently is scant archeological data pertaining to specific lifeways of these people, and few, if any, attempts have been made to synthesize available data.

4.1.4 Plains Village

People of the Plains Village Period (A.D. 900 to A.D. 1750) exploited the Middle Missouri subarea. Subsistence patterns included cultivation of maize, squash, and beans in the Missouri bottom, and bison hunting on the upland grasslands (Ahler et al. 1979). Plains Village people lived for much of the year in earthlodge villages, most usually located along the Missouri River.

There is relatively little archeological evidence of Middle Missouri Tradition or Coalescent Tradition influences on the Northeastern Plains Periphery; however, this may reflect the scant amount of archeological work performed in the region to date. Since no village sites have been recorded in the Grafton area, a few of the village sites which have been investigated in the Northeastern Periphery along with their possible relationship with the Grafton area are discussed below.

Syms (1979) theorizes that a separate, strongly Mississippian-influenced burial complex developed on the northeastern Plains, immediately west of the Arvilla Complex, at about A.D. 900. Syms terms this the Devils Lake-Sourisford Burial Complex (DL-S Burial Complex). This complex is confined to an arc on the northeastern Plains between the Aspen Parkland and the Missouri Coteau. The greatest concentration of sites occurs in the region of Devils Lake, and in the Sourisford Locality of southwest Manitoba (approximately 161.0 km--100 mi.--northwest of Grafton). Most of the finds from the Devils Lake region were from excavations performed by Montgomery (1906); other sites assigned by Syms (1979) to the DL-S Burial Complex are the Star, Sims and Calf Mountain mound sites on the Pembina River in Canada, just north of the North Dakota/Manitoba border and approximately 96.5 km (60 mi.) northwest of Grafton. It should be mentioned that Johnson (1973) tentatively assigned these three sites to the Arvilla Complex.

While Syms (1979) lists numerous traits shared by the DL-S Burial Complex and the Arvilla Complex, he suggests that differences between the two complexes outweigh similarities. He indicates that Arvilla Complex burials had much lower frequencies of mortuary vessels, all of which represent distinctly different late middle Woodland and late Woodland-type pottery. Syms (1979) also states that Arvilla Complex burials contain items such as copper awls and ornaments, barbed harpoons, and distinctive types of pipes, which are rare or non-existent in DL-S burial mounds. Distinctive burial goods associated with the DL-S Burial Complex include miniature, smooth mortuary vessels, sometimes decorated with incised thunderbird designs and/or raised lizzards or salamanders; welk shell (marine snail) masks/gorgetts; "cigar holder-shaped" tubular pipes; and engraved stone tablets (Syms 1979).

People who constructed DL-S mounds were nomadic bison hunters who moved in a seasonal cycle involving wintering in the Aspen Parkland and sheltered valleys, and summering on the plains. Syms (1979) believes that they may have practiced some horticulture during the spring and fall. According to Syms's cyclical theory, complex-associated mounds in the Devils Lake vicinity would represent spring burials of persons who

had died during the winter; this corresponds with people and bison migrating from sheltered, wooded areas out onto the open plains. Syms (1979) continues that the DL-S Burial Complex consisted of Siouian group(s), influenced by Mississippian and Middle Missouri developments, living during the period A.D. 900 to A.D. 1400, and he also states that remnants of traits of the complex persisted into protohistoric and historic periods.

The only village site that Syms (1979) has assigned tentatively to the DL-S Burial Complex to date is the Hendrickson III site (32SN403), located on the James River, approximately 160.9 km (100 mi.) south and slightly east of Devils Lake (Good et al. 1977b). This site has a fortification ditch surrounding three circular house depressions, and two circular and two square-to-rectangular depressions are situated outside the ditch. This is the only fortified village site of this type recorded in the James River Valley, and three radiocarbon dates from the site have been averaged to provide a date of A.D. 1421. Based on results of site testing (Good et al. 1977b), it has been suggested that the site is related temporally and culturally to the early Extended Variant of the Coalescent Tradition (Good et al. 1977b, Schneider 1977).

An unfortified village of earth-covered, circular lodges (site 32SN3) was excavated during the summers of 1952 to 1954 (Wheeler 1963). The site was situated approximately 4.0 km (2.5 mi.) west of Jamestown, but has since been inundated by waters from the Jamestown Dam. Wheeler (1963) placed the site within the Stutsman Focus which he believes to represent the early Historic Period, dated circa A.D. 1750 to 1800. This date is subject to speculation, since it is based on a few pieces of metal with suspect site association. Ceramic sherds from this site have been identified tentatively as early Hidatsa (Wheeler 1963).

The Biesterfeldt site (32RM1) is a large fortified earthlodge village situated on the Sheyenne River, approximately 241.4 km (150 mi.) southwest of Devils Lake. The site was excavated under the direction of William Strong in 1938; Strong's artifact and feature descriptions were published two years later (Strong 1940). Wood (1955) analyzed the ceramic collection from the site in 1954, and in 1971, the Smithsonian Institution published Wood's evaluation (Wood 1971). Site 32RM1 was placed on the NRHP on 2 August 1980.

Strong (1940) identified the site as a late 18th century Cheyenne village; he relied heavily on ethnohistorical documentation to develop this identification (Hayden 1862; Riggs 1863 in Wood 1971). Archeological evidence was found at Biesterfeldt to indicate that village inhabitants possessed horses (Strong 1940); this corresponds with Chippewa tradition, which contends that the Cheyenne village on the Sheyenne River (which was attacked by the Chippewa) included many horses (Tyrrell 1916). After excavation of the site in 1938, Strong (1940) stated that "vegetal remains have not yet been identified but consist of what appears to be maize, numerous seeds, and a considerable amount of birchwood." Wood (1971), however, states that no such material was available in the collection when he analyzed it in 1954. Wood (1971) indicates that Strong (1940) was "led to identify Biesterfeldt as

Cheyenne based on circumstantial evidence alone." Wood does concede that "the Cheyenne occupied the Sheyenne River at the time the site is dated." Since no other lodge villages have been found on the Sheyenne River to date, Wood (1971) indicates that Strong (1940) was lead to choose "the most economical solution to its [the site's] identity."

Wood (1971) states that there can be no doubt that the Biesterfeldt site is part of the Post Contact Coalescent of the Plains Village Pattern; "it is a protohistoric village of sedentary, village dwelling horticulturalists and hunters. . . superficially all but identical to those of contemporary Mandan, Hidatsa, and Arikara settlements." While Strong (1940) stated that Biesterfeldt ceramics are related to Woodland or "northeastern type," Wood (1971) contends that Biesterfeldt pottery is "closely related to those of the Arikara and other sedentary Missouri River tribes."

4.1.5 Plains Nomadic

At least on the Northwestern Plains, a shift from the Plains Archaic subsistence pattern of smaller game exploitation to a pattern of big game hunting marked the advent of the Plains Nomadic Period (A.D. 500 to historic times). Introduction of the bow and arrow and increased numbers of bison were instrumental in bringing about this change. Plains Nomadic projectile points typically are small and side-notched. Presence of stone circles (generally believed to represent tipi dwellings) traditionally is regarded as indicative of Plains Nomadic culture; however, there is considerable evidence that more sedentary peoples (i.e., Plains Woodland and Plains Village people) also used tipis during hunts.

The Avonlea Phase is represented by small, delicate projectile points. First appearing as corner-notched points, perhaps at such sites as Head-Smashed-In in Alberta (Reeves 1970), they apparently were soon replaced by the more familiar Avonlea Phase side-notched points (Kehoe 1966). A gradual transition from atlatl to bow and arrow is not represented by Avonlea points, which may suggest that this transition was very rapid on the Plains or that it took place elsewhere--possibly in the Rocky Mountains (Reeves 1970). It is possible that Besant peoples were introduced to the bow and arrow by Avonlea peoples (Reeves 1970), but in contrast to the Besant Phase, Avonlea peoples rarely used Knife River flint (Syms 1977).

While pottery rarely is associated with Avonlea Phase sites, Joyes (1970) believes that simple-stamped Truman Plains Rim ware may be representative of the Avonlea component at the Avery site (located approximately 144.8 km--90 mi.--north of Devils Lake). Syms (1977) rejects this statement, because he suggests that stratigraphic control was lacking during investigation of the Avery site. Elsewhere, Avonlea ceramics are characterized by fabric-impressed, bossed or punctated, concoidal vessels, and possibly dentate-stamped and cord-marked sherds (Kehoe 1959). Very little is known about the Avonlea burial system. There is no remaining evidence of Avonlea burial mounds, and in the Powder River area of Wyoming and Montana, Avonlea burials are

characterized by primary pit burials with many ornamental and utilitarian grave goods (Reeves 1970). Avonlea peoples apparently were very dependent on bison, as attested to by the large number of bison kill sites containing Avonlea points (Joyes 1970). While most of these kill sites were pounds, a few have been reported to represent actual jumps (Davis 1966). Avonlea campsites appear to be fairly small, temporary camps of nomadic tribes people. Seasonally, these people appeared to be settled in multi-band groups in order to hunt bison communally (Joyes 1970). Although Reeves (1970) suggests use of the tipi, little is known about Avonlea habitation structures.

The origin of the Avonlea Phase is not understood clearly at this time. Kehoe (1966) points to the one-time caribou-driving Athabascans to the north, while Husted and Mallory (1967) suggest an affiliation with peoples of the Middle Missouri region. Reeves (1970) suggests that the Avonlea Phase is a Plains-adapted culture, which followed the Pelican Lake Phase.

Avonlea sites have a broad distribution on the Northern Plains, occurring quite frequently in eastern Montana, and southern and central Saskatchewan. Evidence of Avonlea occupation also is present in northern North Dakota and southern Manitoba. The Avonlea Phase is well-represented at the Avery site (Joyes 1970), which appears to be the only Avonlea Phase site recorded with any proximity to the Grafton area. The Avonlea Phase has initial dates of A.D. 90 ± 120 at the Head-Smashed-In site in Alberta (Reeves 1970) and A.D. 210 ± 60 at the Gull Lake site in southwestern Saskatchewan (Kehoe 1966). Reeves (1970) suggests an initial date for the Avonlea Phase in the Upper Missouri-Black Hills and southwestern Manitoba areas at A.D. 400 to A.D. 500, with a termination date of A.D. 650 to A.D. 700 in southwestern Manitoba, but as late as A.D. 900 in the Upper Missouri-Black Hills areas. These dates indicate that Besant and Avonlea phases were at least partially contemporary.

While there apparently is no record of Avonlea Phase cultural manifestations in the Red River Valley, small prairie and side-notched projectile points (found abundantly in association with plains areas farther west and north) also have been found on both sides of the Red River. No tipi ring sites have been recorded in the Red River Valley, which may be misleading since most of the Red River Valley was cleared years ago for cultivation. Fist-sized stones, used for construction of tipi ring features, are relatively rare in the Red River Valley, and those that are present generally represent glacial deposits. Tipi ring features have been recorded along the Sheyenne and James river valleys and around Devils Lake (Vehik and Vehik 1977; Good et al. 1977a; Schneider 1977). While nomadic hunters were present in eastern North Dakota and western Minnesota, people representing the pure Plains Nomadic likely were more numerous farther west in North Dakota and on the high plains in general.

4.1.6 Discussion

A tentative model of probability for predicting existence of cultural resource sites representative of various cultural periods within

the Grafton study area is provided below. The following discussions were developed through examination of data presented in the above sections.

Paleo-Indian - The Folsom finds reported by Johnson (1962) near Enderlin, North Dakota, appear to be associated with the earlier, well-established Lake Agassiz beachlines. These beach strandlines are located in the Park River-Homme Reservoir area in Walsh County, from 24.1 km (15 mi.) to 32.2 km (20 mi.) east of Grafton and well outside HASI's study area. When Llano and Folsom complex occupations were taking place in present North Dakota, the Grafton area was underwater. It is possible that later Plano Complex sites are present in or near the study area, but presently, no record of Paleo-Indian manifestations occur within 120.7 km (75 mi.) of the Grafton study area.

Plains Archaic - The recorded Plains Archaic sites apparently closest to the Grafton area are the Calf Mountain and Shewfelt sites in the Pembina Mountains of southwestern Manitoba. Michlovic (1981b) encountered a buried Oxbow Phase component in Norman County in the Red River Valley in Minnesota. Michlovic (1979) believes that the Oxbow Phase of the Archaic Period represents eastern affiliations, at least in that portion of the Red River Valley. While it is possible that Plains Archaic components exist in the Grafton study area, there is no record of such manifestations within the Red River Valley in North Dakota.

Plains Woodland - Woodland manifestations, as represented by burial mounds, are well-represented along the Forest River in southern Walsh County and in northern Grand Forks County; they are present to a lesser degree along the Park River in Walsh County. These mounds and associated sites appear to have been built on top of high, well-established beach strandlines, or at elevations well above the river valleys. While the possibility of burial mounds does exist in the Grafton area, the aforementioned geographic features are not present in the Grafton study area. Low remnants of the Burnside Strandlines are present in the study area, but nothing resembling a burial mound or Woodland-associated cultural material was observed during field reconnaissance.

Plains Village - While most Plains Village peoples in present North Dakota lived along the Missouri River, occasional lodge village sites have been recorded on rivers in the eastern portion of the state. Two such villages, the Biesterfeldt site and the Hendrickson III site, were mentioned in the above Plains Village discussion. While it is possible that lodge village sites could exist in the Grafton area, no indications of such features or of Plains village materials were observed during field reconnaissance.

Plains Nomadic - There is no recorded evidence of tipi ring sites in the Red River Valley or in Walsh County. This situation may be caused by the paucity of cultural resource investigations that have been conducted in these areas and by the mass alteration of such features through agricultural activities. Additionally, instances of suitably-sized stones is rare in the Red River Valley. Small triangular, unnotched and side-notched, projectile points--often representative of Plains Nomadic manifestations--have been recovered from sites along the Park River

(Carmichael 1974, Loendorf and Loendorf 1975), and along the Forest River (Cole 1968, Loendorf and Good 1974). While these finds illustrate the possibility of finding Plains Nomadic sites in the Grafton study area, most of the aforementioned sites were located along bluffs overlooking the rivers, rather than at lower elevations (such as the elevation of the study area).

Conclusions - Very few cultural resource inventories have been conducted in the Red River Valley in North Dakota in general, and in Walsh and Grand Forks counties in particular. Consequently, any conclusion drawn as to site potential or settlement patterning must be primarily speculation. The most typical recorded archeological manifestations along the Park and Forest Rivers have been burial mounds (presumably of Woodland origin) and lithic scatter sites (many of which may represent Plains Nomadic occupation/use). Most of the recorded sites are situated on top of bluffs overlooking river valleys or on prominent beach strandlines associated with the Pembina Escarpment. No archeological sites were found along the relatively flat valley floor surrounding Grafton, which seems to support theories about prehistoric settlement patterns in the area.

4.2 PROTOHISTORIC PERIOD

The cultural sequence of the protohistoric period (about 1600 A.D. to 1738 A.D.) in the general Grafton area is virtually impossible to reconstruct, because there is almost no recorded data. Since first contact between native peoples in the region and Europeans occurred with the LaVerendrye Expedition of 1738, it is logical to assume that European trade goods had traveled to the Red River Valley by that time. Cartier's first trading voyage to the present site of Montreal occurred in 1534 (Folwell 1956), over 200 years before first white contact in the general project area. Although Indian trade was of small consequence through the 16th century, the French began to establish trading posts in French Canada and they began to explore westward into the Great Lakes region early in the 17th century. French explorer, Jean Nicolet, was the first European known to make documented contact with an indigenous people of the Upper Midwest. He met the Winnebago at the head of Green Bay in 1634 (Folwell 1956), over 100 years before the Verendrye Expedition. The study area region connects by water to the fur-trading routes through Pembina (located in present North Dakota) and Fort Snelling (located in present Minnesota), so trade would have been practicable directly or through Indian contacts. However, it is more likely that Indian contacts were used, given the distances involved. While indirect contact was possible, there is no evidence (material or documentary) to aid in reconstruction of the actual sequence of events in the region during the protohistoric period.

By using the evidential base from the east for the period 1600 to 1738, researchers have been able to construct a sequence of tribal movement and distribution that does pertain to the study area. The Red River Valley experienced the same general movement of tribes from east to west as did lands farther east. The protohistoric period was characterized by tribes shifting into the Red River Valley from territories

farther east. The abundant game of the study area region attracted tribes, while violent pressure exerted by better-armed tribes to the east forced some tribes to move westward.

The pattern of movement can be illustrated with representative examples. In the 1630s, the Huron, Petuns, and Ottawa were forced east into Wisconsin by the Iriquois, whose territories were being encroached on by Europeans. By 1670, these tribes had been pushed out of Wisconsin by the Dakota. The Dakota suffered a similar fate in the 18th century. In the 1730s, the Wisconsin Chippewa (who had been contacts for Dakota furs going out through Green Bay) began losing this role as the Dakota established direct relations with the French and undertook to drive the Chippewa out of northern Wisconsin and Minnesota. The ensuing war was won by the better-armed Chippewa, and by the time of the American Revolution, the Dakota had been defeated and they had been forced west and south out of Wisconsin (Hickerson 1962).

The effects of these westward pressures were felt first in the Red River Valley in the 17th century, when the Cheyenne of south-central Minnesota were pushed into North Dakota by the better-armed Chippewa and Dakota. The Dakota were routed in turn, when the Teton and Yanktonai tribes were forced out of Minnesota by the Chippewa. By the time of LaVerendrye's 1738 expedition, the Dakota had begun moving into North Dakota (Robinson 1966).

4.3 HISTORIC INDIAN PERIOD

The Red River Valley is an environmental transition zone between the forests and plains, and its prehistoric and historic Indian inhabitants participated both in forest and plains economies. At the time of the LaVerendrye expedition in 1738, the Red River Valley was inhabited and/or used by the Cheyenne, Yanktonai Dakota, and the Cree; the Cheyenne were forced out of the area by 1800 (Robinson 1966). The Canadian Cree, whose territory included a small corner of north-eastern North Dakota, had adapted their basic forest culture to the plains by 1738. For all practical purposes, the Cree had become two tribes by this time-- the Cree of the Woods and the Cree of the Plains.

The Chippewa were the last tribe to migrate from the east into the Red River Valley. Like the Cree, they are of Algonquin linguistic stock, and the Chippewa learned to adapt to their new environment by learning from the Cree. The forest Chippewa had focused on use of the canoe, fish, wild rice, and maple sugar; they did not use horses, and they hunted with a long bow. On the plains, the Chippewa acquired horses and began using short bows. Their forest dwellings had been comprised of saplings covered with bark. On the plains, the Chippewa followed the buffalo, and lived in tipis which were suited to frequent movement.

The Dakota who moved onto the plains from the forests adapted to the plains in much the same way as had the Cree. The Santee followed forest ways, while the Teton adapted to a nomadic Great Plains culture. The Yanktonai adopted a culture that exploited both the forest and the plains (Robinson 1966).

4.4 HISTORIC EURO-AMERICAN PERIOD

The historic Euro-American Period began in the study area region in about 1738, with the arrival of the LaVerendrye Expedition. This period has been divided into two distinct phases: 1) 1738 to about 1878, characterized by exploration and fur-trading; and 2) about 1878 to present, characterized by removal of indigenous peoples, agricultural settlement, and urban development. Various historic developments in the region of the study area are discussed below.

4.4.1 Fur-Trading Era

During the period 1738 to 1818, the study area region was a small part of the overall struggle for the continent. France, England, and America sent representatives into the Upper Midwest; initially to explore and then to trade. This period was characterized by frequent warfare, both in Europe and on the North American continent. The study area was claimed by France between 1671 and 1763, although there is no record of French settlement there. The British controlled the area from 1763 to 1818, and the region was owned by America following the Louisiana Purchase in 1803. The fur trade, however, remained firmly under British control until the War of 1812 finally established American control in the region and drove the British into Canada. An American military presence, such as Fort Snelling--established in 1819 in present St. Paul, Minnesota, on the fur trade route to the southeast--was required to keep them there.

The Red River Valley was unorganized from 1821 to 1834, part of Michigan Territory from 1834 to 1836, part of Wisconsin Territory from 1836 to 1838, and part of Iowa Territory from 1838 to 1846. The valley was unorganized again from 1846 until 1849, part of Minnesota Territory from 1849 until 1858, and part of Dakota Territory from 1858 until 1889. In 1889, the western Red River Valley became part of the state of North Dakota.

The explorers who made first contact in the Red River Valley left behind valuable documentation about the Indian tribes and geography of the region. Among the more notable of these are LaVerendrye (in the area in 1738), his sons (in the area in 1742), Jonathan Carver (in the area in 1768), Zebulon Pike (in the area in 1805), and Stephen Long (in the area in 1823).

From the late 17th century to the time of agricultural settlement in the late 1870s, the fur trade was the chief Euro-American occupation in the region of the study area. It also became a chief preoccupation of Indian tribes in the region. The French began operating out of their Canadian settlements in the 1670s, and continued their involvement after the British took possession of the territory in 1763. The first actual post in the area was established in 1797, when Charles Chaboillez built a British post for the North West Company at Pembina (Kelsey 1951), approximately 56.3 km (35 mi.) north and slightly east of Grafton. The Red River was a vital link in the transportation system used to carry furs out from Pembina to Mendota (at the confluence of the Minnesota and

Mississippi rivers in the present St. Paul/Minneapolis area of Minnesota). The transportation system followed the Red River south to the Boix de Sioux, which connects with the Minnesota River, and that river was traveled east to the Mississippi River.

Following establishment of the Pembina post, the North West Company moved quickly to monopolize trade in the Red River Valley by sending several young men to the region to establish posts. One of these young men, Alexander Henry, set posts up at Grand Forks and at the confluence of the Park and Red rivers in 1800 or 1801, but these posts were very short-lived (Coues 1897).

The period 1800 to about 1878 is basically undocumented for the region, except for Henry's brief description of the area around the mouth of the Park River. He found the water in the Park River "a perfect brine," and his description of the buffalo crossing at the mouth of the Park River indicates that the region was excellent buffalo country (Coues 1897). According to Henry, "The ground on both sides [of the Red River] has been beaten as hard as a pavement and the numerous roads leading to the river a foot deep are surprising. When I consider the hard sod through which these tracks are beaten, I am naturally at a loss and bewildered in attempting to form any idea of the numerous herds of buffalo which must have passed here" (Harold Printing Co. 1909). It is likely that such a region would have drawn white and mixed-blood fur trappers and buffalo hunters, as well as Indians. If so, none of these people left any record of their activities. The missions in the region were headquartered in Fargo; there was no attempt to establish missions in the study area region prior to agricultural settlement.

As fur trade developed in the Red River Valley, traders had to do something to augment the unreliable water route from Pembina to Mendota. Beginning in 1817, they began using two-wheeled wooden carts (usually pulled by oxen and commonly referred to as the Red River oxcarts) to haul goods and furs by land. One of these oxcart trails crossed the Park River at Grafton; however, given the amount of cultivation and urban development along this route, there is scant likelihood that any evidence of this trail remains and HASI's 1981 and 1982 reconnaissance surveys detected no evidence of the old trail.

4.4.2 Agricultural Settlement

The first Euro-Americans to settle permanently near the Grafton area were French Canadians, who began settling along the Park River in April 1878 (Berg 1976). These French Canadians soon were joined by primarily first-generation immigrant Norwegians, who became the largest ethnic group to immigrate to the Red River Valley. Other groups that entered what is now Walsh County include English, Irish, Scots, Germans, and Swedes (Berg 1976).

The greatest influx of people into the Red River Valley area took place between 1879 and 1886. This era became known as the Great Dakota Boom. The two developments most responsible for this boom were improvements in flour milling and construction of railroads. New-process flour

milling made Minneapolis the flour milling center of the United States and created a market, and Railroad construction made the Red River Valley the chief supplier of that market (Robinson 1966).

Wheat exhausted the ground very quickly, however, even the enormously fertile ground of the Red River Valley. This tendency ensured that the region soon would turn to a more diversified agriculture, which resulted in making the area less vulnerable to fluctuations in wheat prices. The diversification in agricultural products is observable in the study at present, as indicated in the environmental overview chapter (Section 3.0).

HASI's cultural resource inventory located the remains of a building (site 32WA4), which apparently was associated with agricultural settlement of the area. This site is located in the SE1/4 SE1/4 NW1/4 of Section 7, T157N, R82W, and the land containing the structure currently is owned by Beulah Swenson. Deed title transfer examination, conducted at the Walsh County Courthouse in Grafton, revealed that this property was homesteaded originally by Charles Bjorken on 31 October 1881. Benjamin J. Johnson owned the land from 5 May 1905 until 31 May 1925. Benjamin Johnson served as mayor of Grafton from 1907 to 1909; the Johnson family home was in Grafton, and Benjamin owned land in Section 7.

With the beginning of agricultural settlement in the late 1870s, the Park River crossing at what came to be Grafton was as important to settlers as it had been to oxcart drivers. Early in 1881, the St. Paul, Minneapolis, and Manitoba Railroad (later known as the Great Northern Railroad) announced its plans to extend its line from Grand Forks north. After some debate, it was decided to cross the Park River on land claimed by Thomas Cooper (located in the NE1/4 of Section 13, T157N, R53W). The area claimed was described as an "old Indian trail" (Dudley 1900). The railroad's choice of Grafton was "by reason of its desirability as a point for crossing the Park River" (Harold Printing Co. 1909). On 21 December 1881, the first train arrived at Grafton (Berg 1976). The growth of Grafton from that time to the present was phenomenal.

Whether a railroad bridge had been constructed across the Park River at Grafton when the first train arrived at the settlement late in 1881 is not known. However, by the end of the following year (1882), the Great Northern Railroad had expanded northward from Grafton to the United States/Canadian border. Review of an early county atlas (Andreas 1884) revealed that a Great Northern Railroad bridge was in place across the Park River in 1884; this bridge was located at approximately the same location as site 32WA5. The bridge illustrated on the Andreas (1884) map also is depicted on an 1884 plat map of Grafton (Sanborn 1884). Whether the bridge constructed across the Park River in 1907 (32WA5) replaced the original railroad bridge (built in about 1881) or whether it replaced a later bridge is not clear. It can be stated that site 32WA5, built in 1907, was constructed at the location of the original Great Northern Railroad Park River crossing. A more detailed description of site 32WA5 is provided in the investigation results section (Chapter 8.0), and the NDCRS site form is provided in Appendix II.

Walsh County was organized in 1881, and it was named for George H. Walsh--the mayor of Grand Forks. The county was formed of the two northern tiers of townships from Grand Forks County and the two southern tiers of townships from Pembina County. The town of Grafton, presently the county seat, was incorporated in the same year (Andreas 1884).

5. THEORETICAL AND METHODOLOGICAL OVERVIEW

The COE presently is engaged in the planning stages of a flood control project at Grafton, North Dakota. It is the primary goal of the contractor, HASI, to provide information necessary for the COE to comply with federally-mandated regulations regarding cultural resources. These regulations have been set forth in: the Historic Preservation Act of 1966 (Public Law--PL--89-665); the National Environmental Policy Act of 1969 (PL 90-190); Executive Order 11593 for the Preservation and Enhancement of the Cultural Environment (Federal Register, 13 May 1973); the Archaeological Conservation Act of 1974 (PL 93-291); the Advisory Council on Historic Preservation "Regulations for the Protection of Historic Properties" (36 CFR 60); and COE Regulations (ER1105-2-460) "Identification and Administration of Cultural Resources" (Federal Register, 3 April 1978). Furthermore, HASI has endeavored to produce a scholarly report which may serve as a scientific reference for future professional studies.

In order to meet the above goals, HASI undertook a cultural resource inventory of the project project area. This inventory included literature and records search and review, coupled with pedestrian survey. The literature and records search was conducted prior to completion of the pedestrian survey portion of the inventory; such reviews often afford researchers an opportunity to predict the types and distribution of resources that may be encountered during survey. While completing background work, descriptions of well-documented resources often are obtained, as well as data on sites that are known but that will require further study. Literature search also may make possible the development of a broad evaluatory framework within which the significance of particular resources can be determined. Specific methods, sources, and results of literature and records search and review are presented in the following chapter (Section 6.0).

A cultural resource survey was conducted in order to determine the number and extent of cultural resources present in the study area, and in order to determine the relationships of those resources to the project alternatives and feature locations. This survey consisted of on-the-ground pedestrian investigation of all proposed project feature locations and alternatives. NDCRS forms were completed for the two cultural resource sites located and recorded within the survey area; these forms are provided in Appendix II. Recommendations for future handling of these resources are provided in the recommendations chapter (Section 10.0), and detailed descriptions of specific methods employed to complete cultural resource survey are included in the field methods chapter (Section 7.0).

6. LITERATURE AND RECORDS SEARCH AND REVIEW

Advantage was taken of all known available sources that might contain information pertinent to the prehistory and/or history of Grafton and the surrounding area, during conduct of literature and records search and review. The NRHP, published in the Federal Register, and the North Dakota State Historic Sites Registry were reviewed at SHSND in Bismarck, North Dakota. The NDCRS master data files also were examined there. No historic or archeological sites had been located or recorded in the specific survey areas, no cultural resource studies had been conducted therein previously, and no currently listed NRHP or North Dakota State Historic Sites Registry properties were located within specific survey areas.

The Chester Fritz Library, in particular the North Dakota Room, at UND, Grand Forks, contained the bulk of data used in literature review. Other published and unpublished documents that contained data pertinent to the various overview sections of this report were found in HASI's research library (then in Grand Forks, North Dakota) and at the UND Archaeological Research (UNDAR) library. Histories of the community of Grafton and of Walsh County were examined; the best of these is contained in a two-volume set written by the Walsh County Historical Society (Berg 1976), and a short, early work entitled Grafton Illustrated (Dudley 1900). However, little information was obtained about the specific study area. The North Dakota Room's map collections contained two useful sources on early developments in the Grafton area: Andreas Historical Atlas of North Dakota (Andreas 1884) and an 1893 Plat Book of Grand Forks, Walsh and Pembina Counties (D.W. Ensign and Co. 1893). Locations of what apparently were two early farmsteads located in an area that may be affected by the proposed diversion structure (Figure 2, Section 1.0) were found in Andreas (1884) and D.W. Ensign and Co. (1893). One apparent farmstead was located in the SW1/4 NW1/4 SW1/4 of Section 12, T157N, R53W, on land owned by Iver Dahl in 1884 (Andreas 1884). By 1893, another apparent farmstead had been established nearby in the NW1/4 SW1/4 SW1/4 of Section 12, T157N, R53W, on land owned by J.A. Domstadt (D.W. Ensign and Co. 1893). The most current U.S.G.S. topographic quadrangle map of the Grafton area, however, does not indicate presence of abandoned buildings in the specific areas of these two possible farmsteads, nor does the most current atlas (Midland Atlas Co. 1981). The original locations of these homesteads were field-checked extensively in fall 1981 and again in spring 1982. Both areas are being cultivated, and if any debris had remained it should have been observable on the ground surface; however, no features or materials were noted during either conduct of either field reconnaissance. Therefore, it was determined that structures associated with the two possible homesteads have been dismantled, fallen to decay, or they have been transported elsewhere.

The NDCRS master data files revealed that no previous cultural resource work had been conducted in the Grafton study area, and that little such work had been done in the Park River Valley. Therefore, the area of concentration was expanded to include the better-documented Sheyenne and James river valleys of North Dakota, the middle Red River Valley of North Dakota and Minnesota, and the Pembina River Valley of

southern Manitoba. Vehik and Vehik (1977) present a good literature review of cultural and paleontological resources in the Sheyenne River basin. HASI staff have considerable experience in the Jamestown and LaMoure-Oakes area of the James River Valley. Unpublished reports dealing with prehistoric occupations along the James River Valley (Good et al. 1976; Good et al. 1977a,b; Schneider 1977) were used in formulating the prehistory chronology of the general area. Michlovic, Moorhead State University, has done much recent archeological work along the middle Red River Valley in Minnesota (Michlovic 1979, 1981a). The archeology of Manitoba has been synthesized in a collection of studies contained in Ten Thousand Years: Archaeology in Manitoba (Hlady 1970). Many of the articles contained in this document include data potentially pertinent to the Grafton area.

The Geology Departmental library and the Ecological Institute library, both located at UND, were used extensively in preparing the environmental setting chapter (Section 2.0) of this report. The most useful documents include geological studies conducted by Bluemle (1975) and the environmental impact study conducted for the COE.

It should be noted that staff of HRI, Minneapolis, Minnesota, researched and compiled the protohistoric and historic overview portions of the regional human occupation chapter (Section 4.0), under subcontract to HASI. HRI staff researched and compiled the environmental setting chapter (Section 2.0) under the same subcontract. HASI staff researched and compiled the prehistoric overview portion of the regional human occupation chapter (Section 4.), and HASI staff edited and compiled the sections completed by HRI into final format.

7. FIELD METHODS

The city of Grafton is in Walsh County, North Dakota, on the Park River, approximately 24.1 km (15 mi.) upstream from the confluence of the Park River with the Red River (Figure 1, Section 1.0). The flat prairie of the Grafton area is on the first terrace and the floodplain of the Park River, whose channel averages about 14 m (45.9 ft.) wide as it passes through the city, and this area is subject to flooding.

Seven proposed COE flood control goals have been combined variously in six flood control plans at Grafton. The five plans involved in HASI's COE cultural resource project at Grafton are delineated on Figures 2 through 6 in Section 1.0. COE Plan 4 was not included in HASI's contracted survey areas (see Scope of Work in Appendix I). The seven types of proposed flood control included in the five flood control plans at Grafton include:

- 1) ring levee, 30.5 m (100 ft.) survey width;
- 2) flood bypass, 152.4 m (500 ft.) survey width;
- 3) bypass channel, 152.4 m (500 ft.) survey width;
- 4) interceptor drain, 7.6 m (25 ft.) survey width;
- 5) tieback levee, 15.2 m (50 ft.) survey width;
- 6) channel and bridge modification, 15.2 m (50 ft.) survey width on both sides of the river channel where proposed, and 61.0 m (200 ft.) survey width at cutoff alignments; and
- 7) ditch modification (McCloud Ditch and associated natural coulees), 15.2 m (50 ft.) survey width on both sides of existing ditch disturbance (30.5 m or 100 ft.), making a total 61.0 m (200 ft.) survey width.

Survey conditions were generally good, since many of the ROWs were along or on top of existing roadways or through plowed fields. ROW lines that followed the riverbanks, natural coulees, or the existing McCloud Ditch did contain somewhat dense vegetation, and these areas were surveyed more strenuously. The two cultural resource sites located and recorded through conduct of this project (sites 32WA4 and 32WA5) were easily visible; site 32WA4 was defined by a rectangular patch of unplowed, unmowed prairie grass isolated in a plowed field, and site 32WA5 is represented by a functioning railroad bridge.

Topsoil of the Grafton area is dark sandy loam to a depth of as much as 40.0 cm (16 in.), where soil grades into a lighter clayey loam and into sandy clays with gravels. In some places along the riverbank, topsoil has a higher content of humus and sand, and it is not so thick a layer above the more clayey subsoil. This stratigraphic data was obtained through analysis of the McCloud Ditch cutbank and through analysis of results of shovel tests conducted in the Leistikow City Park (see Figure 10 in Section 8.0).

Method of reconnaissance was by pedestrian survey, and pedestrian survey in all cases was conducted through use of the transect method (Figure 9). Survey personnel were spaced not more than 16 m (52.5 ft.) apart and the zig-zag courses effected a maximum 8 m (26.3 ft.) radius scope of view, allowing each person to adequately investigate the ground surface. Transects were interrupted by side trips, necessary to inspect visual anomalies.

Subsurface shovel tests were conducted at site 32WA4, and they revealed a rubble of cobble-size concrete chunks to a depth of about 25.0 cm (9.8 in.). These concrete chunks were mixed with an organic eolian silt. The very sparse scatter of cultural material in the vicinity of the single foundation feature at site 32WA4 included a few iron wire (round) nails, sherds of brown glass, and a few small sherds of white-paste-glazed earthenware; most of these artifacts were within 2.0 m (6.6 ft.) of the foundation feature. Additional shovel tests were conducted at two places in Leistikow City Park (on the south bank of Park River in the proposed channel and bridge modification area of Plan 3 (Figure 4, Section 1.0, and Figure 10, Section 8.0)). These tests were conducted to probe the depth of possible cultural deposits, and no significant depth was noted for the surface scatter of recent historical debris in this vicinity. The debris at this location consisted of modern clothes washer/dryer bodies and parts. This locale was not recorded as a cultural resource site because of the recent nature of the debris encountered, and because the locale does not appear to be the site of the washing facility. Additionally, results of shovel tests in this area indicate that the observed debris was not superimposed over an earlier dump area. Shovel test forms for all shovel tests completed through conduct of this project are included in Appendix III.

Cultural material specimens were not collected from the Plant View Homestead site (32WA4), from the Railroad Bridge site (32WA5), or from any other area during the Grafton Flood Control Project cultural resource survey. The few artifacts observed at site 32WA4 were not diagnostically important and they offered little possibility for temporal affinity analyses, and no cultural materials were observed in association with the bridge feature recorded as site 32WA5.

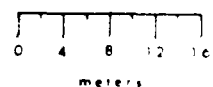
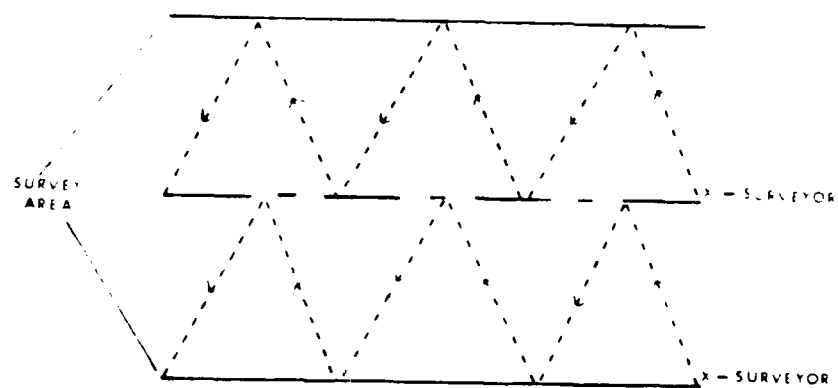


FIGURE 9. Survey Methods. (Note: All survey areas were surveyed using this method. Survey personnel were spaced not more than 16 m apart, and the zig-zag courses effected a maximum 8 m radius scope of view, which allowed each person to adequately investigate the ground surface.)

8. INVESTIGATION RESULTS

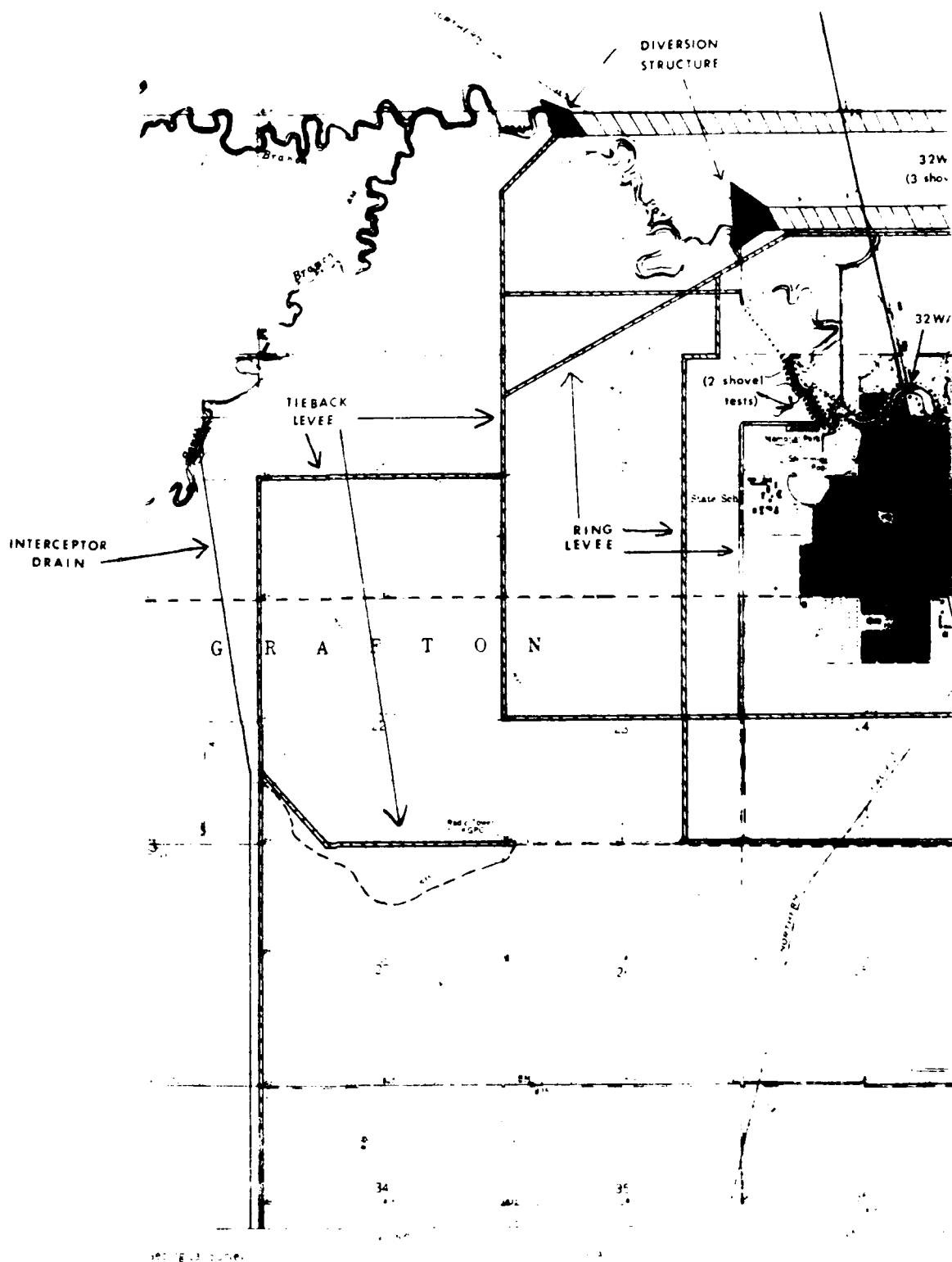
No cultural resources located within the study area are currently listed on the NRHP or on the State Historic Sites Registry. No previously recorded cultural resource sites were situated within any Grafton Flood Control Project survey width, nor will any previously recorded cultural resource sites be affected directly or indirectly by proposed flood control measures. Two cultural resource sites were recorded by HASI archeologists during reconnaissance survey: the Plant View Homestead site (32WA4) and the Railroad Bridge site (32WA5) (Figure 10). Each of these sites was recorded on a NDCRS site form (Appendix II), and these sites are discussed separately in sections 8.1 and 8.2, which are provided below.

An area of modern refuse was observed within the Leistikow City Park; however, shovel tests conducted in this area revealed that the refuse area was not the original location of observed materials and they revealed that the observed materials are not superimposed over a "dump site." Therefore, the refuse locale was not recorded as a cultural resource site.

Initial study area pedestrian reconnaissance was conducted in September 1981. HASI returned to the Grafton area in spring 1982, in response to draft report review comments. The spring 1982 reconnaissance was conducted primarily to examine bridges in the Grafton area, which appeared likely to be affected by the channel and bridge modification stages of flood control Plans 3 or 5, and the Bridge Modification or Removal stage of Plan 6 (Figures 4, 5, and 6 in Section 1.0 and Figure 11). The Railroad Bridge site (32WA5) was recorded as a result of this 1982 reconnaissance visit; the remaining five bridges located within the Grafton area were examined and related documentary research was conducted about them. Since none of the bridges in the Grafton area will be affected by proposed flood control measures (according to information gained by HASI at the time of receipt of draft report review comments) and since only the Railroad Bridge (site 32WA5) is architecturally significant, the remaining five bridges were not recorded as cultural resource sites. Each of these five bridges is described briefly, however, in section 8.3 below.

8.1 PLANT VIEW HOMESTEAD SITE (32WA4)

The Plant View Homestead site (32WA4) is an Euro-American historic homestead site located in the SE1/4 SE1/4 NW1/4 of Section 7, T157N, R52W. The site is situated 98 m (321.5 ft.) north of the east-west section line road and 390 m (1,279.6 ft.) east of the railroad tracks (Figure 10). The site is comprised of one feature (rectangular foundation remains) and a very sparse associated cultural material scatter. The foundation is 11 m (36 ft.) north to south by 5 m (16.4 ft.) east to west, and it is covered with eolian silt and prairie grasses. The site area (approximately 120 sq. m) is defined by this one feature and the sparse scatter of cultural materials. These cultural materials include small fragments of metal (i.e., pieces of wire nails), sherds of brown bottle glass, and white-paste-glazed earthenware sherds. No abandoned



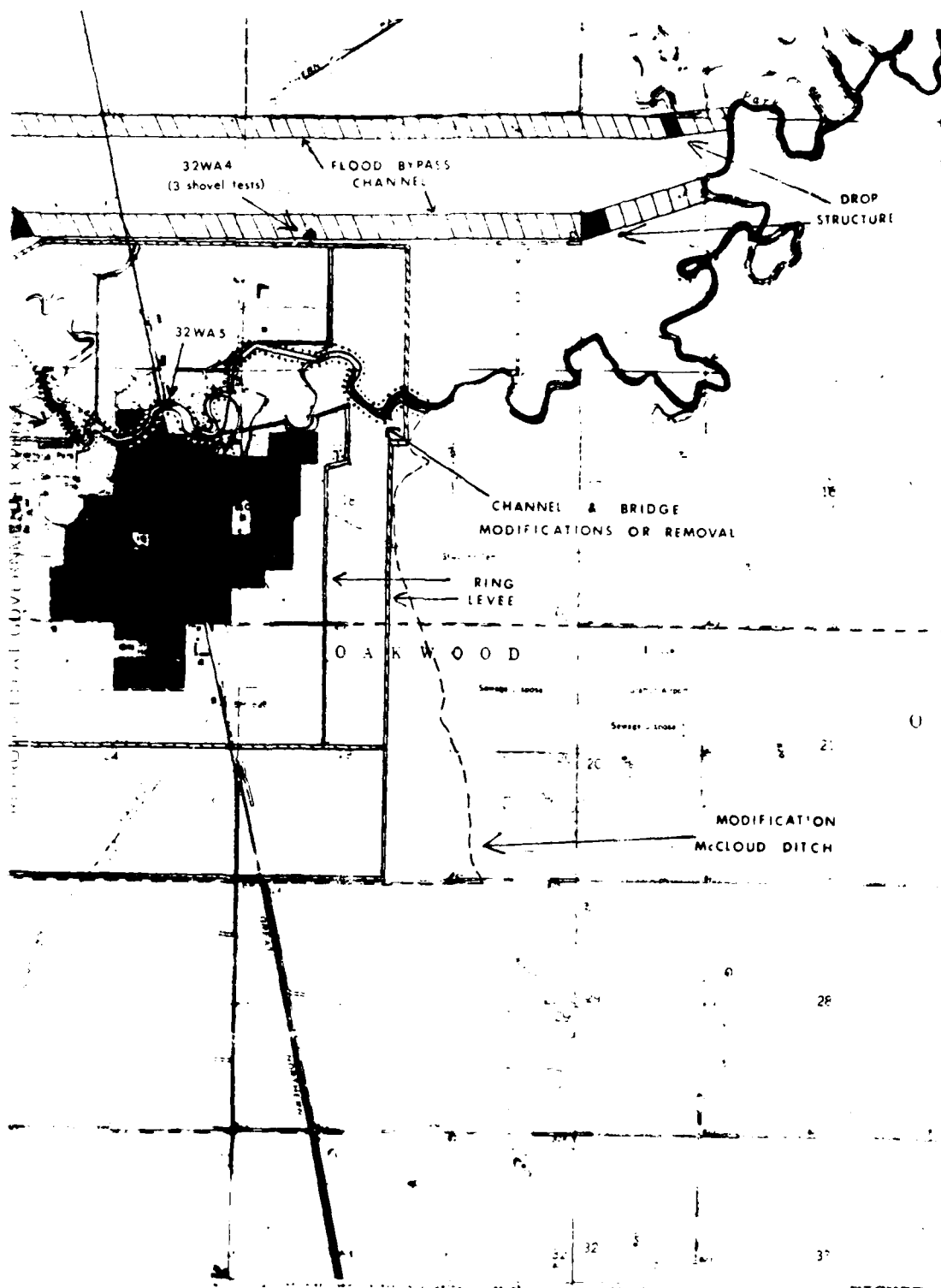


FIGURE 10. Proposed Flood Contr
Grafton, North Dakota (T15
R53W), Cultural Resource Sit
Study Area, and General Locatio
Tests. (Source of base ma
Grafton, North Dakota 1960)

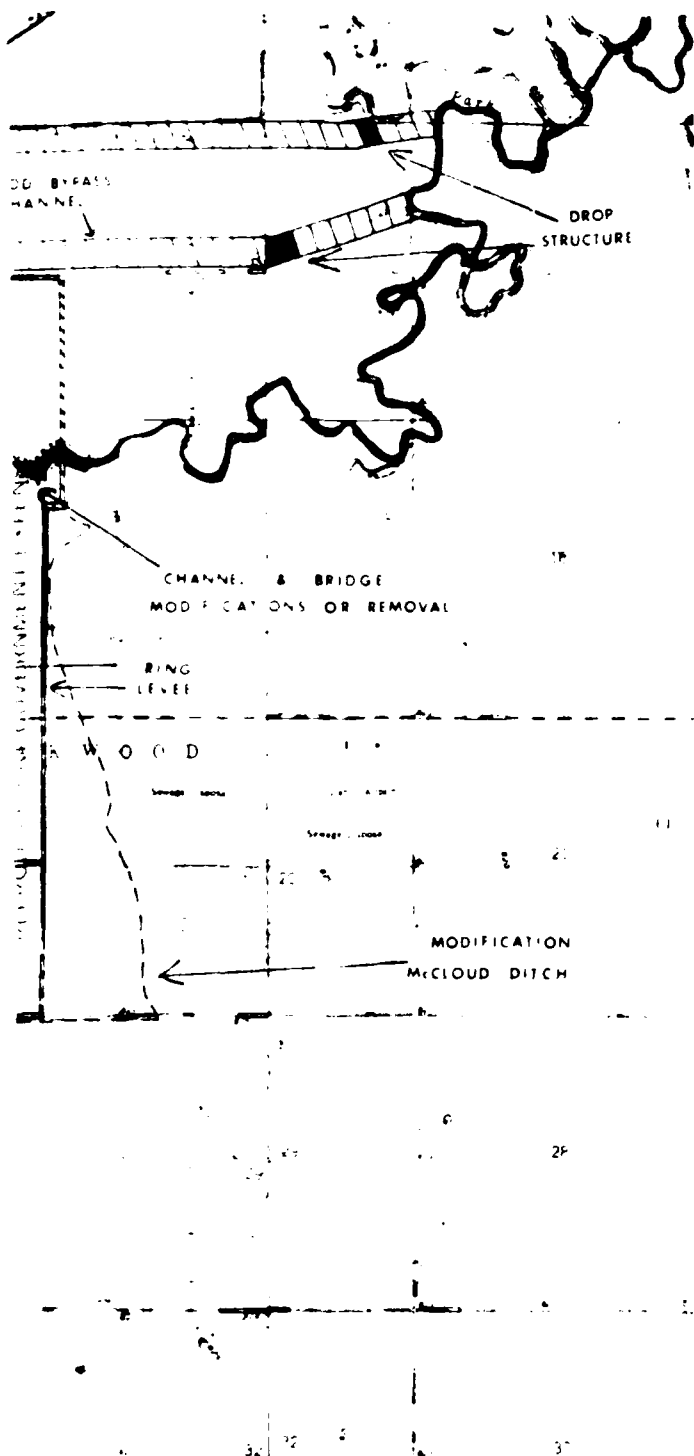


FIGURE 10. Proposed Flood Control Measures in Grafton, North Dakota (T157N, R52W and R53W), Cultural Resource Sites Recorded in Study Area, and General Locations of Shovel Tests. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

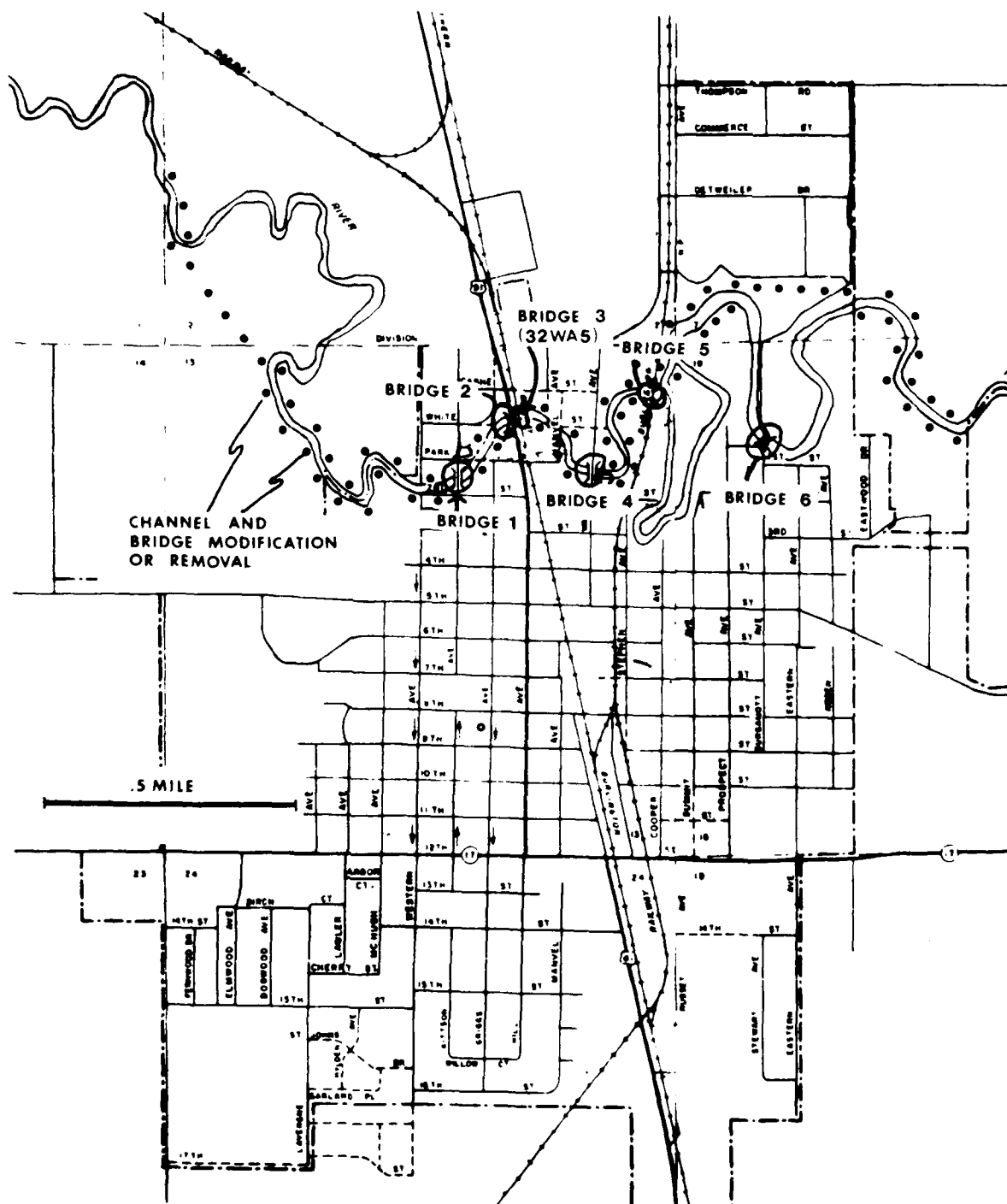


FIGURE 11. Six Bridges that Cross the Park River in the Grafton, North Dakota Area. (Source of base map: Midland Atlas Company, Inc. 1981)

agricultural implement parts or any other features were observed in the vicinity of the foundation, and no cultural materials were collected from the site. Potential natural vegetation in the area of the site is prairie grasses and forbs. Presently, grasses and introduced weeds grow on the site, which stands as an island of vegetation in the plowed field.

The area around the site's one feature has been disturbed thoroughly by cultivation (plowing), and the cultural materials scattered in the area have been disturbed and mixed. Culturally sterile soil was noted below the approximate 35 cm (14 in.) of topsoil turned over for cultivation. Three shovel tests conducted within the rectangular, unplowed site area (i.e., the area containing the site's one feature) revealed that the concrete rubble comprising the foundation did not extend below the surface of organic eolian silt. It is very unlikely that the structure that the foundation presumably supported had a cellar, because the rubble comprising the foundation is not sunken or mounded; rather, it is as level as the surrounding field. A piece of strap iron was found protruding from the rubble, but no other artifacts were noted during conduct of shovel tests. Soil in the site area, as determined by conduct of the shovel tests, is a dark organic loam to a depth of about 35 cm (14 in.), where it grades into a lighter soil with a greater percentage of clay and sand.

Site 32WA4 is on the first terrace of the Park River, but apparently has not been flooded in recent times. Cultural integrity of the site has been affected, however, by cultivation and removal of the structure presumably once supported by the apparent foundation feature.

The land containing site 32WA4 currently is owned by Beulah Swenson. Deed title transfer examination, conducted at the Walsh County Courthouse in Grafton, revealed that this property was homesteaded originally by Charles Bjorken on 31 October 1881. Benjamin J. Johnson owned the land from 5 May 1905 until 31 May 1925. Benjamin Johnson served as mayor of Grafton from 1907 to 1909; the Johnson family home was in Grafton, and Benjamin owned land in Section 7.

Since the integrity of site 32WA4 has been altered extensively, the site does not retain extant architectural features that may have provided the site with architectural significance, and the site is not associated with historically important events, the site has been determined not significant and not eligible for inclusion on the NRHP. The site apparently is associated with a former mayor of Grafton (Benjamin J. Johnson); however, it is very unlikely that any further important or interpretative information could be gained by additional research conducted at or about the site. Therefore, no further cultural resource work is recommended for this site.

8.2 RAILROAD BRIDGE SITE (32WA5)

The Railroad Bridge site, (32WA5) was recorded by HASI in June 1982 in response to draft report review comments. This site is located in the SE1/4 NW1/4 NE1/4 of Section 13, T157N, R53W, and it is a railroad bridge (a total 52.9 m or 173.6 ft. long) that spans the Park River (Figure 10).

The bridge is a plate steel span bridge that was built in 1907 for or by the Great Northern Railroad Company (Burlington Northern Engineers Office 1982). The superstructure of the bridge consists of three sections of steel plate, two of which measures approximately 18.5 m (60.7 ft.) and the third measures about 15.2 m (49.9 ft.). The width between the plates is 4.72 m (15.5 ft.), and a 0.5 m (1.6 ft.) wide, wooden walkway is located on either side of the railroad tracks. The bridge is supported by two cut sandstone block abutments, and two cut sandstone block piers. Each abutment consists of four courses of cut sandstone blocks, which are adhered by concrete mortar. These abutments measure 10.0 m (32.8 ft.) in length (east-west), 0.75 m (2.5 ft.) in width (north-south), and are 1.1 m (3.6 ft.) high. The piers contained within the Park River channel also are constructed of four courses of cut sandstone blocks adhered by concrete mortar. The piers measure 8.0 m (26.3 ft.) in length (east-west), 1.6 m (5.3 ft.) in width (north-south), and they are approximately 2.5 m (8.2 ft.) high (Burlington Northern Engineers Office 1982).

Early in 1881, the St. Paul, Minneapolis, and Manitoba Railroad (later known as the Great Northern Railroad) announced its plans to extend its line north from Grand Forks. After some debate, it was decided to cross the Park River on land claimed by Thomas Cooper (located in the NE1/4 of Section 13, T157N, R53W). The area claimed was described as an "old Indian trail" (Dudley 1900). The railroad's choice of Grafton was "by reason of its desirability as a point for crossing the Park River" (Harold Printing Co. 1909). On 21 December 1881, the first train arrived at Grafton (Berg 1976).

Review of an early county atlas (Andreas 1884) revealed that a Great Northern Railroad bridge was in place across the Park River in 1884; this bridge was located at approximately the same location as site 32WA5. The bridge illustrated on the Andreas (1884) map also is depicted on an 1884 plat map of Grafton (Sanborn 1884). Whether the bridge constructed across the Park River in 1907 (32WA5) replaced the original railroad bridge (built in about 1881) or whether it replaced a later bridge is not clear. It can be stated that site 32WA5, built in 1907, was constructed at the location of the original Great Northern Railroad Park River crossing.

This bridge may be the last steel plate, span railroad bridge with cut sandstone block piers and abutments remaining in existence in the Red River Valley. The bridge was built 75 years ago, and it represents a presently rare example of an architectural style and design that once was somewhat common (Burlington Northern Engineers Office 1982). Additionally, the bridge structure is in excellent condition, i.e., the integrity of this site apparently has not been altered by natural or other disturbances. Therefore, HASI determined that this site is architecturally significant and eligible for inclusion on the NRHP.

8.3 BRIDGES IN THE GRAFTON AREA

Five bridges, additional to the Railroad Bridge recorded as site 32WA5, were identified along the Park River (Figure 11). Each of these bridges is discussed briefly below; bridge numbers correspond with those used in Figure 11.

Bridge 1 - This structure is situated across the Park River on Kittson Avenue, and within the city limits of Grafton. The first known structure at this location was a foot bridge, built between 1907 and 1914 (Sanborn 1907, 1914). The foot bridge was replaced by the present structure in 1916 (Walsh County Engineers Office 1982). The present structure is a 24 m (77 ft.) long pony truss, through-bridge, with a wood plank wearing surface and concrete float slab abutments.

Bridge 2 - This structure is situated across the Park River on Hill Avenue (U.S. Highway 81), and within the city limits of Grafton. A bridge is known to have existed at this location as early as 1893 (D.W. Ensign and Co. 1893), and the present structure was built in or around 1970 (Markuson 1982). The bridge has a concrete deck, abutments, and piers.

Bridge 3 - This bridge was recorded as site 32WA5, and it is discussed above in Section 8.2

Bridge 4 - This structure is situated across the Park River on Wakeman Avenue, and within the city limits of Grafton. The first known structure at this location was built at least as early as 1884 (Sanborn 1884). The present structure was built in 1929 (Walsh County Engineers Office 1982), and it is a 27 m (88 ft.) long pony truss, through-bridge. The bridge has a concrete wearing surface, and concrete float slab abutments. This structure is slated to be replaced in the spring of 1983 (Markuson 1982).

Bridge 5 - This structure is a railroad bridge, situated across the Park River in the NE1/4 NE1/4 NE1/4 of Section 13, T157N, R53W, and within the city limits of Grafton. The first known structure at this location was a Northern Pacific Railroad bridge, built at least as early as 1893 (D.W. Ensign and Co. 1893). The present structure was built in 1955 (Burlington Northern Engineers Office 1982), and it is constructed completely of treated timber logs.

Bridge 6 - This structure is situated across the Park River on Burgamott Avenue, and within the city limits of Grafton. The first known structure at this location was built at least as early as 1893 (D.W. Ensign and Co. 1893), and the present structure was built in 1925 (Walsh County Engineers Office 1982). The present bridge is a 22 m (70 ft.) long, pony truss, through-bridge; it has a concrete wearing surface, and it has concrete float slab abutments.

As indicated in the introduction to the present chapter, with the exception of bridge 3 (the Railroad Bridge site, 32WA5), none of the bridges across the Park River in the Grafton area are architecturally significant; the SHPO verbally concurred with this determination (Bailey 1982). Additionally, information obtained by HASI at the time of receipt of draft report review comments indicated that none of the six bridges in the Grafton area will be affected by proposed flood control measures. Therefore, only bridge 3 (the Railroad Bridge site, 32WA5) was recorded as a cultural resource site.

9. EVALUATION AND CONCLUSIONS

No previously recorded cultural resource sites or currently listed NRHP or North Dakota State Historic Sites Registry properties will be affected directly or indirectly by any measures proposed in the five flood control plans requiring survey. Two cultural resource sites were recorded by HASI during conduct of this project: 32WA4 and 32WA5. Site 32WA4 is an historic homestead site and site 32WA5 is an architectural site (a railroad bridge).

The integrity of site 32WA4 has been altered extensively, the site does not retain extant architectural features that may have provided the site with architectural significance, and the site is not associated with historically important events. Therefore, the site has been determined not significant and not eligible for inclusion on the NRHP. The site apparently is associated with a former mayor of Grafton (Benjamin J. Johnson); however, it is very unlikely that any further important or interpretative information could be gained by additional research conducted at or about the site.

Site 32WA5 may be the last steel plate, span railroad bridge with cut sandstone block piers and abutments remaining in existence in the Red River Valley. The bridge was built 75 years ago, and it represents a presently rare example of an architectural style and design that once was somewhat common (Burlington Northern Engineers Office 1982). Additionally, the bridge structure is in excellent condition, i.e., the integrity of this site apparently has not been altered by natural or other disturbances. Therefore, HASI determined that this site is architecturally significant and eligible for inclusion on the NRHP.

As indicated in the investigation results chapter (Section 8.0), with the exception of the Railroad Bridge site (32WA5), none of the bridges across the Park River in the Grafton area are architecturally significant; the SHPO verbally concurred with this determination (Bailey 1982). Additionally, information obtained by HASI at the time of receipt of draft report review comments indicated that none of the six bridges in the Grafton area will be affected by proposed flood control measures. Therefore, only bridge 3 (the Railroad Bridge site, 32WA5) was recorded as a cultural resource site.

10. RECOMMENDATIONS

Various proposed Grafton Flood Control measures appear likely to affect the two cultural resource sites recorded in the study area. Plans likely to affect the two sites are discussed below, along with recommendations for future handling of the two sites.

Site 32WA4 will be affected directly by the proposed Plan 1 flood bypass channel and/or ring levee, both of whose survey width lines cross the site vicinity in an east to west direction (Figure 2, Section 1.0, and Figure 10, Section 8.0). Exact location of the ring levee is not provided in the project Scope of Work (Appendix I), nor is it shown on the plan map which accompanied the Scope of Work, but if its survey width touches the section line road, it will not affect the site (which is 98 m or 321.5 ft. north of the road centerline). The proposed flood bypass channel is not located precisely on the map, but because its survey width is 152.4 m (500 ft.) wide, it can be assumed to cross the site. The Plan 5 proposed ring levee (Figure 5, Section 1.0, and Figure 10) has a 30.5 m (100 ft.) wide survey width, which is delineated on project maps as being conterminous with the road, and therefore should not affect the site directly. Since site 32WA4 has been determined not significant, no further work is recommended whether or not Plan 1 is chosen for flood control in the Grafton area.

Site 32WA5 is situated within an area that appeared likely to be impacted by channel and bridge modification proposed in Plan 3 and in Plan 5, or bridge modification or removal proposed in Plan 6 (Figures 3, 5, and 6 in Section 1.0, and Figures 10 and 11 in Section 8.0). The Railroad Bridge site is considered to have the potential for significance, since it represents what may be the only remaining structure of its kind in the Red River Valley. Recommendations concerning the Railroad Bridge site ideally include implementation of flood control measures other than Plan 3, Plan 5, or Plan 6, in order to avoid the site completely; information obtained by HASI at the time of receipt of draft report review comments indicated that the bridge likely would not be affected by proposed flood control measures. If the railroad bridge site can not be avoided, however, mitigation minimally should include: 1) in-depth literature search to include review of the files of the Burlington Northern Railroad Company's engineer's office in St. Paul, Minnesota; 2) compilation of an extensive photographic record of the structure; 3) oral history interviews with area residents and/or appropriate Burlington Northern Railroad personnel; and 4) search through old, local newspapers housed at the Walsh County Historical Society in Minto, North Dakota for documentation relevant to the site.

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APPENDIX I

Contract DACW37-81-M-2533 Scope of Work

<input checked="" type="checkbox"/> CHECKED BOX APPLIES		<input checked="" type="checkbox"/> ORDER FOR SUPPLIES OR SERVICES RS		<input type="checkbox"/> REQUEST FOR QUOTATIONS NO.		PAGE 1 OF	
		RETURN		COPIES OF THIS QUOTE BY			
		(THIS IS NOT AN ORDER. See DD Form 1155r)					
1. CONTRACT/PURCH ORDER NO. 87-81-M-2533		2. DELIVERY ORDER NO.		3. DATE OF ORDER 81 SEP 68		4. REQUISITION/PURCH REQUEST NO. NCSED-ER-R-1050	
5. ISSUED BY:		CODE		7. ADMINISTERED BY: (If other than 6)		CODE	
8. CONTRACTOR/QUOTER		CODE		FACILITY CODE		10. DELIVER TO FOB POINT BY:	
HISTORICAL & ARCHAEOLOGICAL SURVEYS, INC. 2207 SPRINGBROOK COURT GRAND FORKS, ND 58201						8. DELIVERY FOR <input checked="" type="checkbox"/> DEST <input type="checkbox"/> OTHER (See Schedule if other)	
						11. CHECK IF <input checked="" type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> MINORITY BUSINESS	
						12. DISCOUNT TERMS NET	
				13. MAIL INVOICES TO:			
14. SHIP TO: 1210 USPO & CUSTOM HOUSE ST. PAUL, MN 55101		CODE		15. PAYMENT WILL BE MADE BY:		CODE	
						MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER	
16. DELIVERY		This delivery order is subject to instructions contained on this side of form only and is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.					
PURCHASE <input checked="" type="checkbox"/>		Reference your WRITTEN QUOTE 81 AUG 24 , furnish the following on terms specified herein, including, for U.S. purchases, General Provisions of Purchase Order on DD Form 1155r (EXCEPT CLAUSE NO 13 APPLIES ONLY IF THIS BOX <input type="checkbox"/> IS CHECKED, AND NO 15 IF THIS BOX <input checked="" type="checkbox"/> IS CHECKED); special provisions					
		10 USC 2304(a)(3) or as specified in the schedule if within the U. S., its possessions or Puerto Rico; if otherwise, under 2304(a)(6).					
		<input type="checkbox"/> If checked, Additional General Provisions apply; Supplier shall sign "Acceptance" on DD Form 1155r and return copies.					
ACCOUNTING AND APPROPRIATION DATA/LOCAL USE							
R11810016							
AC-124-01-04E0-0000							
18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES			20. QUANTITY ORDERED/ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
1	CULTURAL RESOURCES INVESTIGATION OF THE FLOOD CONTROL PROJECT AT GRAFTON, ND. THE CONTRACTOR WILL PERFORM THE SERVICES OUTLINED IN THE ATTACHED SCOPE OF WORK. "STATEMENT OF WAGES. THE MINIMUM WAGE TO BE PAID PERSONNEL PERFORMING WORK UNDER THIS CONTRACT MAY BE ADDED BY MODIFICATION WHEN RECEIVED FROM THE DEPT OF LABOR." ORIGINAL			1	JOB		3,977.00
<small>* If quantity accepted by the Government is same as quantity ordered, indicate by <input checked="" type="checkbox"/> mark. If different, enter actual quantity accepted below quantity ordered and enclose.</small>				24. UNITED STATES OF AMERICA		25. TOTAL	
				BY: R. C. LINDBERG		\$3,977.00	
26. QUANTITY IN COLUMN 20 HAS BEEN:				27. S/R NO.		28. D.O. VOUCHER NO.	
<input type="checkbox"/> INSPECTED <input type="checkbox"/> RECEIVED <input type="checkbox"/> ACCEPTED AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED				<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		32. PAID BY	
DATE _____ SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE _____				31. PAYMENT		33. AMOUNT VERIFIED CORRECT FOR	
36. I certify this shipment is correct and proper for payment.				<input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		34. CHECK NUMBER	
DATE _____ SIGNATURE AND TITLE OF CERTIFYING OFFICER _____				40. TOTAL CONTAINERS		35. BILL OF LADING NO	
37. RECEIVED AT		38. RECEIVED BY		41. S/R ACCOUNT NUMBER		42. S/R VOUCHER NO.	

SCOPE OF WORK
CULTURAL RESOURCES INVESTIGATION
FOR A FLOOD CONTROL PROJECT
AT GRAFTON, NORTH DAKOTA

1.00 INTRODUCTION

1.01 The Contractor will undertake a cultural resources reconnaissance survey of the flood control project at Grafton, North Dakota.

1.02 This cultural resources inventory is being done in partial fulfillment of the obligations of the St. Paul District regarding cultural resources, as set forth in the Historic Preservation Act of 1966 (Public Law (P.L.) 89-665), the National Environmental Policy Act of 1969 (P.L. 91-190), Executive Order (E.O.) 11593 for the Protection and Enhancement of the Cultural Environment (Federal Register, 13 May 1971), the Archaeological Conservation Act of 1974 (P.L. 93-291), the Advisory Council on Historic Preservation "Regulations for the Protection of Historic and Cultural Properties" (36 CFR Part 800), the Department of the Interior guidelines concerning cultural resources (36 CRF Part 60), and Corps of Engineers regulations (ER 1105-2-460) "Identification and Administration of Cultural Resources" (Federal Register, 3 April 1978).

1.03 The above laws establish the importance of Federal leadership, through the various responsible agencies, in locating and preserving cultural resources within project areas. Specific steps to comply with these laws, particularly as directed in P.L. 93-291 and E.O. 11593, are being taken by the Corps "...to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance." A part of that responsibility is to locate, inventory, and nominate to the Secretary of the Interior all such sites in the project area that appear to qualify for listing on the National Register of Historic Places.

1.04 The Executive Order further directs Federal agencies "...to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered." In addition, the Corps is directed to administer its policies, plans and programs in such a way that federally and non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved and maintained for the inspiration and benefit of the people.

1.05 This cultural resources investigation will serve several purposes. The report will be a planning tool to aid the Corps in meeting its obligations to preserve and protect our cultural heritage. It will be a comprehensive, scholarly document that not only partially fulfills federally mandated legal requirements but also serves as a scientific reference for future professional studies. It will identify sites which may require additional investigations and which may have potential for public-use development. Therefore, the report must be analytical, not just descriptive.

2.00 PROJECT DESCRIPTION

2.01 A feasibility report for flood control and related purposes on the Park River, North Dakota, was completed in 1973, and identified the problems and needs of the Park River basin. The results of the feasibility study indicate that the majority of flood damages along the South Branch and main stem Park Rivers occur at Grafton, North Dakota.

2.02 The primary concern of residents in the Park River subbasin is the control of floodwaters on the South Branch and main stem Park River. Of the existing flood damages along the South Branch and main stem Park River, approximately 83 percent are urban damages, of which about 99 percent occur at Grafton and 1 percent at Park River. Flood damages to crops and rural developments constitute the remaining 17 percent. Another concern has been providing Grafton and Park River with an assured water source during a drought period. However, a recently constructed pipeline from the Red River will greatly reduce potential water shortages in Grafton.

2.03 The Park River drains 1,010 square miles of the northeastern North Dakota counties of Walsh, Pembina, and Cavalier with 52 percent, 26 percent, and 22 percent of the total basin located in the respective counties. The headwaters rise in the drift prairie of southeastern Cavalier County at an approximate elevation of 1,600 feet above mean sea level. The three principal headwater streams--the South, Middle, and North Branches--emerge from the drift prairie escarpment about 13 miles west of Grafton and flow in a south-east and easterly direction to an almost common confluence 2 or 3 miles west of Grafton. From this point the Park River meanders eastward across the flat Red River Valley plain and joins the Red River of the North 36 miles south of the international boundary at about elevation 760. As the headwater branches emerge from the escarpment, the valleys diminish rapidly until the channel banks are at the same or somewhat higher elevation than the adjacent plains. Grafton is located in this flat region, and the main stem of the Park River flows through the town. The drainage area above Grafton is 695 square miles, with the South, Middle, and North Branches containing 297 square miles, 165 square miles and 233 square miles, respectively.

2.04 Floods on the Park River usually occur in early spring when melting snow causes rapid runoff in the escarpment region along the headwater branches. Factors affecting the size of spring floods include the amount of snow on the ground, the depth of frost in the ground, temperatures during breakup, and spring rains. No known floods have occurred during fall or winter. Homme Dam and Lake and the upstream Soil Conservation Service reservoirs retard runoff from the area above their outlets so that flood peaks downstream are somewhat reduced. Damaging floods occur primarily east of the escarpment. In this area, where the land is flat and banks are low, flood flows inundate a considerable amount of rural land. The total duration of large historic floods on the South Branch Park River at Park River and Grafton has been about 25 and 30 days, respectively.

2.05 The largest flood of record on the Park River occurred in April 1950. The flood resulted from rapid melting of a heavy snow cover concentrated over the entire basin. Peak discharges observed below Homme Dam were 13,000 cfs on 24 April 1950 and 12,600 cfs on 19 April 1950. Following a recession, additional snowmelt and spring rains caused a second discharge of record with peak flows of 5,030 cfs on 9 May 1950 below Homme Dam and 8,730 cfs on 9 May 1950 at Grafton. The maximum discharge of 13,000 cfs on 24 April 1950 recorded below Homme Dam resulted from failure of the emergency embankment used in construction of the dam. The variation in peak discharges of specific floods is shown in the following table.

2.06 High flows can inundate thousands of acres of cropland, the city of Grafton, and part of the town of Park River. The record flood of 1950 forced evacuation of portions of Grafton for up to 6 weeks. The most recent flood occurred in 1979, causing serious interruption of business, services, and transportation, and inundating up to 60,000 acres of cropland along the South Branch and main stem Park River.

2.07 Five structural and one non-structural plan are currently being considered. Formerly there were six structural plans; however, Plan 4 was eliminated. A brief description of each plan follows (see also inclosures 1-7 and the enlarged project maps).

a. Plan 1 - Combination Ring Levee and Flood Bypass Channel - This plan consists of a combination ring levee and flood bypass channel, and would protect Grafton from floods up to and including the standard project flood. Pertinent features of this plan include: an earthen ring levee encircling Grafton, a flood bypass channel located north of and adjacent to the levee, two gated control structures where the levee crosses the Park River, and interior drainage facilities to accommodate stormwater runoff inside the levee.

b. Plan 2 - Flood Bypass Channel - This plan would protect Grafton and adjacent rural areas. Pertinent features include a bypass channel and an interceptor drain and tieback levee upstream and north of Grafton.

c. Plan 3 - Channel Improvement at Grafton - This plan would protect the city of Grafton. Pertinent features include an increase in the natural river channel capacity through town, an interceptor drain and tieback levee upstream and north of Grafton, and necessary bridge modifications.

d. Plan 4 - Upstream Reservoir Storage - This plan will not be surveyed. It would consist of one reservoir or a combination of reservoirs to reduce downstream flooding. Upstream reservoir storage could reduce downstream flooding. Upstream reservoir storage could reduce downstream flood damage in the rural areas along the South Branch Park River, but because of the limited drainage area above the reservoir sites, flood damages for major floods at Grafton would not be significantly reduced.

e. Plan 5 - Levees at Grafton - This plan would provide flood protection for Grafton. Pertinent features include a ring levee around the section of town north of the river, a ring levee around the section of town south of the river, necessary channel improvements and bridge modifications, and interior drainage facilities to accommodate stormwater runoff within the leveed areas.

f. Plan 6 - Combination Channel Improvement and Flood Bypass Channels - This plan was requested by the city in response to the study initiation letter. Pertinent features include channel improvements on the Park River at Grafton, improvement of the McCloud Drain south of Grafton, and improvement of the Berg Coulee north of Grafton. The McCloud Drain flows east along the south side of town and then north into the Park River. The Berg Coulee flows in an easterly direction and flows into the Park River east of Grafton. The McCloud Drain and Berg Coulee would be used to divert excess flows around Grafton.

g. Plan 7 - Nonstructural Alternative - Combined Floodproofing and Evacuation - This plan will not be surveyed. A primarily nonstructural plan will be developed and presented as one of the candidate plans in stage 3 of the planning process. Floodproofing and floodplain evacuation are two kinds of nonstructural alternatives that can reduce existing flood damages. Permanent evacuation of all or most improvements from the floodplain in Grafton is impractical because most of the city and its improvements are in the floodplain, as is much of the surrounding land. Floodproofing, by contrast, shows a greater probability for feasibility because much of Grafton's floodplain sustains water depths of less than 3 feet from the 1-percent chance flood. Thus, the most feasible nonstructural alternative would combine permanent evacuation of improvements from the lowest portions of the floodplain with floodproofing of the improvements in the remainder of the floodplain. In addition to these alternative plans, a combined plan consisting of structural and nonstructural measures will be developed and evaluated.

3.00 DEFINITIONS

3.01 For the purpose of this study, the cultural resources investigation will include a literature and records search and review, and a Phase I on-the-ground reconnaissance level survey. Phase II testing will not be conducted at this time.

3.02 "Cultural resources" are defined to include any building, site, district, structure, object, data, or other material relating to the history, architecture, archaeology, or culture of an area.

3.03 "Literature and records search" is defined as a search for and examination of written reports, books, articles, files, records, etc., published and unpublished (found in private, local, State, and Federal depositories), which are pertinent to the cultural resources investigation to be carried out for a particular project. The purposes of the literature and records search are: to familiarize the Contractor with the culture history of the study area and past investigations which have been carried out in the area; to document the location and condition of known sites which may exist within the project area, the extent of past work undertaken at the site, and any other information which may be relevant in assessing the significance of the site; and to provide this information in a summarized form to the agency requesting the search. Although existing data may be extensive, the literature and records search should be as comprehensive as possible in providing a usable body of data for the purposes outlined above.

3.04 "Literature and records review" is defined as the review and evaluation of the pertinent literature and records examined under section 3.03. The purpose of the literature and records review is to provide the sponsoring agency with the Contractor's professional opinion as to the quality, nature, and extent of the sources identified in the literature and records search (see section 5.11).

3.05 "Phase I cultural resources survey" is defined as an intensive, on-the-ground survey and testing of an area in order to determine the number and extent of the archaeological, historic, and architectural resources present and their relationship to all the project alternatives and features. A Phase I cultural resources survey will result in data adequate to assess the general nature of all sites present; a recommendation for additional testing of those resources which, in the professional opinion of the Contractor, may provide important cultural and scientific information; and detailed time and cost estimates for Phase II testing.

3.06 "Phase II testing" is defined as the intensive testing of those sites which may provide important cultural and scientific information. Phase II testing will result in data adequate to determine the eligibility of the resources for inclusion on the National Register of Historic Places, a plan for the satisfactory mitigation of eligible sites which will be directly or indirectly impacted, and detailed time and cost estimates for mitigation. Phase II testing will not be conducted under this contract.

4.00 SURVEY SPECIFICATIONS

4.01 The literature and records search and review conducted by the Contractor will encompass both the specific project area and a larger, regional archaeological and historic study area. The scope of the search and review shall be large enough to provide the sponsor with an overall perspective on the area's cultural resources as well as project-specific information.

4.02 Under this contract, five project alternative plans will be surveyed. Some plans consist of combinations of alternatives. Hence, there will be some duplication. A description of the project plans follows.

a. Plan 1 - Combination Ring Levee and Flood Bypass Channel

1. Ring Levee

- a. Length: 8.7 miles
- b. Survey Width: 100 feet
- c. Present Condition: cultivated
- d. Percent to Survey: 100 percent

2. Ring Levee Alternative

The south and west border of the ring levee could have a different alignment. These areas are delineated on the map of Plan 1 in yellow. The specifications are the same as above. One hundred percent of this alternative alignment shall be surveyed.

3. Flood Bypass

- a. Length: 2.9 miles
- b. Survey Width: 500 feet
- c. Present Condition: cultivated
- d. Depth: 8-12 feet
- e. Percent to Survey: 100 percent

b. Plan 2 - Flood Bypass Channel

1. Bypass Channel

- a. Length: ca. 3.7 miles
- b. Survey Width: 500 feet
- c. Depth: 8-12 feet
- d. Present Condition: cultivated
- e. Percent to Survey: 100 percent

2. Interceptor Drain

- a. Length: ca. 2.4 miles
- b. Survey Width: 25 feet
- c. Depth: 4-5 feet
- d. Present Condition: natural drainage, but will add a new ditch
- e. Percent to Survey: 100 percent

3. Tieback Levee

- a. Length: ca. 5.6 miles
- b. Survey Width: 50 feet
- c. Present Condition: On top of old roads. Depth of construction unknown. Some of the levee will be new (delineated in green on the Plan 2 map).
- d. Percent to Survey: 100 percent where feasible

c. Plan 3 - Channel Improvement at Grafton

1. Tieback Levee

This feature is the same as in Plan 2 with the exception of a small alignment change at the northern end. In this plan the levee alignment turns to the east in Section 11 for about 1 mile. Since the levee will be surveyed under Plan 2, only the area of the new alignment should be 100 percent surveyed under this plan. The levee specifications are the same, and the area to be surveyed is delineated on the Plan 3 map in pink.

2. Interceptor Drain

This feature has been discussed in Plan 2, and will be surveyed under that plan.

3. Channel and Bridge Modification

This alternative consists of widening and deepening the river channel, and cutting off portions of the channel.

Length: Cutoffs: ca. 1.45 miles; channel modification: ca. 1.0 miles

Survey Width: 50 feet on both sides of the river channel, excluding the sections of the river that will be cut off; and 200 feet for the cutoff alignments

Present Condition: Varies from cultivated to undisturbed

Percent to Survey: 100 percent

d. Plan 4 - Upstream Reservoir Storage

This plan will not be surveyed.

e. Plan 5 - Levees at Grafton

1. North Ring Levee

- a. Length: ca. 2.0 miles
- b. Survey Width: 100 feet
- c. Present Condition: Primarily cultivated
- d. Percent to Survey: 100 percent. The area to be surveyed is delineated in yellow on the Plan 5 map.

2. South Ring Levee

This alternative has already been surveyed under Plan 1.

3. Channel and Bridge Modification

This alternative has already been surveyed under Plan 3.

f. Plan 6 - Combination Channel Improvement and Flood Bypass Channel

1. Tieback Levee

The specifications of the levee are discussed in Plan 2. The areas of different alignment, from Plans 2 and 3, shall be surveyed. They are delineated on the Plan 6 map in pink.

2. Modification of McCloud Ditch

- a. Length: ca. 6.0 miles
- b. Survey Width: 50 feet on each side of the ditch
- c. Present Condition: 100 feet of the ditch is already disturbed. Fifty additional feet on each side of the ditch will be disturbed. It is a natural ditch, which will be improved and modified.

3. Modification of Berg Coulee

This alternative will not be surveyed.

4. Flood Bypass Channel

This alternative will be surveyed under Plan 2.

5. Bridge Modifications or Removal

This alternative will be surveyed under Plan 3.

5.00 PERFORMANCE SPECIFICATIONS

5.01 The Contractor will utilize a systematic, interdisciplinary approach in conducting the study. The Contractor will provide specialized knowledge and skills during the course of the study to include expertise in archeology, history, architectural history and other social and natural sciences as required.

5.02 The extent and character of the work to be accomplished by the Contractor will be subject to the general supervision, direction, control, review and approval of the Contracting Officer.

5.03 Techniques and methodologies that the Contractor uses during the investigation shall be representative of the current state of knowledge for their respective disciplines.

5.04 The Contractor shall keep standard records which shall include, but not be limited to, field notebooks, site survey forms, field maps, and photographs.

5.05 The tested areas will be returned as closely as practical to presurvey conditions by the Contractor.

5.06 The recommended professional treatment of recovered materials is curation and storage of the artifacts at an institution that can properly insure their preservation and that will make them available for research and public view. If such materials are not in Federal ownership, the consent of the owner must be obtained, in accordance with applicable law, concerning the disposition of the materials after completion of the report. The Contractor will be responsible for making curatorial arrangements for any collections which are obtained. Such arrangements must be coordinated with the appropriate officials of North Dakota and approved by the Contracting Officer.

5.07 When sites are not wholly contained within the right-of-way, the Contractor shall survey an area outside the right-of-way limits large enough to include the entire site within the survey area. This procedure shall be done in an effort to delineate site boundaries and to determine the degree to which the site will be impacted.

5.08 The Contractor shall provide all materials and equipment as may be necessary to expeditiously perform those services required of the study.

5.09 Should it become necessary in the performance of the work and services, the Contractor shall, at no cost to the Government, secure the rights of ingress and egress on properties not owned or controlled by the Government. The Contractor shall secure the consent of the owner, his representative, or agent, in writing prior to effecting entry on such property. If requested, a letter of introduction, signed by the District Engineer, can be provided to explain the project purposes and request the cooperation of landowners. Where a landowner denies permission for survey, the Contractor shall immediately notify the Contracting Officer and shall describe the extent of the property to be excluded from the survey.

Literature And Records Search And Review (See sections 3.03 and 3.04 for definitions)

5.10 The Contractor will obtain information and data for the literature and records search from, but will not be limited to, the following sources:

a. Published and unpublished reports and documents such as books, journals, theses, dissertations, manuscripts, newspapers, surveyor's maps and notes, early atlases, missionary records, and other private, city, State or Federal documents.

b. Site files and other information held at the North Dakota and Minnesota State Historical Society Libraries, Archives, and Archaeology Department; the State Archaeologist's Office; the Universities of North Dakota and Minnesota Department of Anthropology and libraries; and materials available from the Walsh County Historical Society and other local historical societies.

c. The Contractor will obtain from the North Dakota State Historic Preservation Office information regarding any cultural resources in the project area that have been nominated or are being considered for nomination to the National Register of Historic Places, and will report the results in the contract report.

d. Consultation with other professionals familiar with cultural resources in the area.

e. Consultations with amateur archeologists, historians, and individuals concerned with local archeology and history in order to locate sites and to identify and define local interests and resources perceived to be locally significant.

5.11 A review and evaluation of previous archeological and historical studies of the region, including the date, extent, and adequacy of the past work as it reflects on the interpretation of what has been done in the area, should be undertaken and summarized in the report.

5.12 The literature and records search shall include a listing of all sites (historic and prehistoric) identified during the course of the study and an evaluation of the direct and indirect impact upon them of all the proposed project alternatives and features.

Phase I Survey

5.13 The on-the-ground examination will involve an intensive survey and sub-surface informal testing of the area in order to determine the total number and extent of cultural resources present. This includes standing architectural structures as well as historic and prehistoric archeological sites.

5.14 An attempt will be made to locate all resources previously recorded that are located in the project area as described in the preceeding sections and to report their condition.

5.15 The survey shall include surface inspection in areas where surface visibility permits adequate recovery of cultural materials and subsurface testing where surface visibility is limited. Subsurface investigation will include shovel testing, coring, soil borings, or cut bank profiling, where necessary and appropriate.

5.16 The recommended grid or transect interval is 15 meters (50 feet). However, this interval may vary depending upon field conditions. If the recommended interval is not used, justification should be presented for selection of an alternate interval. All subsurface tests will be screened through 1/4-inch mesh.

6.00 GENERAL REPORT REQUIREMENTS

6.01 The Contractor will submit the following types of report as described in this section and in section 9.00: field report, draft contract report, final contract report, and a periodic report.

6.02 The Contractor's technical report shall include, but not be limited to, the following sections.

a. Title Page: The title page shall provide the following information: the type of investigation undertaken; the cultural resources involved (archeological, historical, and architectural); the project name (county and State); the date of the report; the Contract number; the name of the author(s) and/or Principal Investigator; the signature of the Principal Investigator; and the agency for which the report is being prepared.

b. Abstract: An abstract of findings, conclusions, and recommendations. This should not be an annotation.

c. Management Summary: This section will include a concise summary of the study, which will contain all essential data for using the document in the Corps of Engineers management of the project. This information will minimally include: why the work was undertaken and who the sponsor is, a brief summary of the scope of work and budget, summary of the study (field work; lab analysis; literature and records search and review, including the National Register of Historic Places, dates checked, and results), study limitations, study results, significance, recommendations and the repository of all pertinent records and artifacts.

d. Table of Contents

e. List of Figures

f. List of Plates

g. Introduction: This section shall identify the sponsor (Corps of Engineers) and the sponsor's reason for the study; an overview of the sponsor's project and the alternatives, with the alternatives located on USGS quad maps; provide an overview of the archeological/historical study to be undertaken; define the location and boundaries of the study area (with regional and area-specific maps); define the study area within its cultural, regional, and environmental context; reference the scope of work; identify the institute that did the work, the number of people involved in the study, the number of person-days/hours utilized during the study; identify the dates when the various types of work were completed; identify the repository of records and artifacts; and provide a brief overview or outline of how the study report will proceed and an overview of the major goals that the study/study report will accomplish.

h. Previous Archeological and Historical Studies: This section shall provide a summary and evaluation of previous archeological and historical studies of the project area and region, including the researchers, date, extent, adequacy of the past work, study results, and cultural/behavioral inferences derived from the research.

i. Environmental Background: This section shall include a description of the study area and regional environment, including the following categories: geology, vegetation, fauna, climate, topography, physiography, and soils, with reference to prehistoric, historic, ethnographic, and contemporary periods. Any information available on the relationship of the environmental setting to the area's prehistory and history shall be included. This section shall be of a length commensurate with other report sections.

j. Regional Prehistory and History: This section shall discuss regional cultural developments, spatially and chronologically; environmental adaptations; subsistence, resource procurement, and settlement patterns; site/population density and size; and any other pertinent information on the prehistory, proto-history, and history of the project area and region.

k. Theoretical and Methodological Overview: This section shall include a description or statement of the goals of the Corps of Engineers and the study researcher, the theoretical and methodological orientation of the study, and the research strategies that were applied in achieving the stated goals.

l. Literature and Records Search and Review: This section shall detail the methodology and sources used for the literature and records search and review as well as a description and evaluation of all information and data recovered. For each reference discussed, the author, date and page numbers will be cited. Bibliographic information shall also be included at the end of the report. (See sections 3.03, 3.04, 5.10, 5.11 and 5.12.)

m. Field Methods: This section will describe specific archeological and historical activities that were undertaken to achieve the stated theoretical and methodological goals. The section shall include all field methods, techniques, strategies, and rationale or justification for specific methods or decisions. The description of the field methods shall minimally include: a description of the areas surveyed, survey conditions, topographic/physiographic features, vegetation conditions, soil types, stratigraphy, survey limitations, survey testing results with all appropriate testing forms to be included as an appendix (e.g., shovel tests, coring, cut bank profiles, etc.), degree of surface visibility, whether or not the survey resulted in the location of any cultural resources, the methods used to survey the area (pedestrian reconnaissance, subsurface test, etc.), the rationale for eliminating uninvestigated areas, the estimated size of the investigated sample and its relationship to the sample universe (e.g., 100 acres were surveyed, representing 15 percent of the project impact area), and the grid or transect interval used. Testing methods shall include descriptions of test units (size, intervals, stratigraphy, depth) and the rationale behind their placement.

n. Analysis: This section will describe and provide the rationale for the specific analytic methods and techniques used, and describe and discuss the qualitative and quantitative manipulation of the data. Limitations or problems with the analysis based on the data collection results will also be discussed. This section shall also contain references to accession numbers used for all collections, photographs, and field notes obtained during the study, and the location where they are permanently housed.

o. Investigation Results: This section will describe all the archeological and historic resources encountered during the study, and any other data pertinent to a complete understanding of the resources within the study area. This section shall include enough empirical data that the study results can be independently assessed. The description of the data shall minimally include: a description of the site; amounts and type of material remains recovered; relation of the site or sites to physiographic features, vegetation and soil types, project alternatives, and direct and indirect impact areas; analysis of the site and data (e.g., site type, cultural historical components and information, cultural/behavioral inferences or patterns); site condition; and location and size information (elevation, complete quad map source, legal description, address if appropriate, and site size, density, depth, and extent). The information shall be presented in a manner that can be used easily and efficiently by the Corps of Engineers. This site information shall be presented with each site discussed on a separate page/pages and the site location indicated on a USGS map. If a site location has not been field-verified, the Contractor must indicate the approximate area on the map and indicate that it has not been verified, or give an explanation why the site cannot be located on a map. An example of this site description format follows:

Site Number and Name

Complete Legal Description: Township, Range, Section, County or Address, if appropriate. Indicate if the site has been field-verified or not, when and by whom.

Complete USGS Quadrangle Reference: Quad name, Quad size, all Quad dates.

Report Figure/Map/Plate Reference

Accession Numbers

Site Type, Site Reports, Investigations of Dates

Cultural Affiliation (with dates or date estimates)

Environmental Descriptions: Briefly, to include topography, physiography, soils, and vegetation.

Site Description

Present Site Condition: Disturbed, undisturbed, vegetation, soils, and surface material.

Site Significance: As reported by others and the Contractor's evaluation, including an evaluation of previous conclusions.

Project Impacts: Evaluate the direct and indirect impacts of the project upon the site.

Recommendations: Management recommendations, future archeological/historic work recommendations.

Remarks: For comments with no other category.

Pertinent Bibliographic References

A paragraph before the site descriptions should indicate that, if no information is available for a specific category, this category will not be included in the listing.

The location of all sites and other features discussed in the text will be shown on a legibly photocopied USGS map and will be bound into the report. Maps shall also be included showing the relationship of sites to the project areas which were surveyed. In addition, the project map will show those areas that have been eliminated from the survey due to unacceptable survey conditions. Maps should also show the type of survey method employed for each area surveyed (for example, pedestrian walkover, shovel tests). All maps will be labeled with a caption/description, a north arrow, a scale bar, township, range, map size, and dates, and the map source (e.g., the USGS quad name or published source) and will have proper margins. All sites will be recorded on the appropriate State site forms. Inventoried sites shall include a site number. Official site designations assigned by an appropriate State agency are preferred. However, if temporary site numbers will be used in either the draft or final reports, they shall be substantially different from the official site designations to avoid confusion or duplication of site numbers. Known sites shall have their State site forms updated as necessary.

p. Evaluation and Conclusions: This section shall evaluate and formulate conclusions concerning site/sites location, density, size, condition, distribution, and significance in relation to the local and regional archeology and history; and in relation to the project alternatives and features; and shall also discuss the potential and goals for future research. The section shall also discuss the reliability of the analysis or other pertinent data recovered (e.g., site locations, types, distribution, etc.); relate results of the study and analysis to the stated study goals; identify changes, if any in the research goals; synthesize and compare the results of the analysis and study; integrate ancillary data; and identify and discuss cultural/behavioral patterns and processes that are inferred from the study and analysis results.

q. Recommendations: This section shall discuss the direct and indirect impacts of all the project alternatives and features on the area's cultural resources with specific management recommendations on all previously recorded and newly discovered sites; discuss the significance of sites to the extent permitted by the study level in relation to the research goals established in the study; make recommendations on the potential eligibility of the sites to the National Register of Historic Places; recommend future intensive level research priorities, needs; and make suggestions with regard to the Corps of Engineers planning goals and project alternatives. These recommendations shall include a time and cost estimate. If it is the Contractor's assessment that no significance resources exist in the project area, the methods of investigation and reasoning which support that conclusion will be presented. If certain areas are not accessible, recommendations will be made for future consideration. Any evidence of cultural resources or materials which have been previously disturbed or destroyed will be presented and explained.

r. References: This section shall provide standard bibliographic references (American Antiquity format) for every publication cited in the report. References not cited in the report will be listed in a separate "Additional References" section.

s. Appendix: This section shall include the Scope of Work; resumes of all personnel involved; all correspondence derived from the study; all State site forms; all testing and any other pertinent report information referenced in the text as being included in the appendix.

6.03 Failure to fulfill these report requirements will result in the rejection of the report by the Contracting Officer.

7.00 FORMAT SPECIFICATIONS

7.01 The Contractor shall submit to the Contracting Officer the photographic negatives for all black and white photographs which appear in the final report.

7.02 All text materials will be typed, single-spaced (the draft reports should be space-and-one-half or double-spaced), on good quality bond paper, 8.5 inches by 11.0 inches, with a 1.5-inch binding margin on the left, 1-inch margins on the top and right, and a 1.5-inch margin at the bottom, and will be printed on both sides of the paper.

7.03 Information will be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective, or advantageous to communicate the necessary information.

7.04 All figures and maps must be clear, legible, self-explanatory, and of sufficiently high quality to be readily reproducible by standard xerographic equipment, and will have margins as defined above.

7.05 The final report cover letter shall include a budget of the project.

7.06 The draft and final reports will be divided into easily discernible chapters, with appropriate page separation and heading.

7.07 Negatives of all black and white photographs contained in the final report must be included so that copies for distribution can be made.

8.00 MATERIALS PROVIDED

8.01 The Contracting Officer will furnish the Contractor with the following materials:

a. Access to any publications, records, maps, or photographs that are on file at the district headquarters.

b. Two sets of USGS Quadrangle maps of the project area. One set will be used as field maps, and one set will be returned to the Corps of Engineers designating site numbers and locations, and areas surveyed and tested.

c. One set of project alternative maps.

d. A letter of introduction signed by the St. Paul District Engineer explaining the objectives of the work and requesting cooperation from private landowners, if requested.

9.00 SUBMITTALS

9.01 The Contractor will submit reports according to the following schedules:

a. Field Report: The original and one copy of a field report will be submitted after completion of the field work. The field report will summarize the work, project/field limitations, methodology used, time utilized, and survey results.

b. Project Field Notes: One legible copy of all the project field notes will be submitted with the draft contract report.

c. Draft Contract Report: The original and 10 copies of the draft contract report will be submitted on or before 60 days after contract award. The draft contract report will be reviewed by the Corps of Engineers, the State Historic Preservation Officer, the State Archeologist, and the National Park Service. The draft contract report will be submitted according to the report and contract specifications outlined in this Scope of Work.

d. Final Contract Report: The original and 15 copies of the final contract report will be submitted 30 days after the Corps of Engineers comments on the draft contract report are received by the Contractor. The final contract report will incorporate all the comments made on the draft contract report.

e. Popular Report: A draft popular report will be submitted with the draft contract report, and will be reviewed by the Corps of Engineers. Fifteen copies of the final popular report will be submitted with the final contract report. The popular report shall be a condensed version of the contract report that would be of interest to the general public. The report shall provide an overview of the archeology, protohistory, and history of the project area and region; a brief review of the work conducted in the area and the reasons (both professional and managerial) why the work was conducted, and the results of the completed survey. Exact site locations will not be reported in the popular report.

f. Site Forms: All completed State site forms will be submitted to the appropriate State agency.

9.02 Neither the Contractor nor his representative shall release any sketch, photograph, report, or other material of any nature obtained or prepared under the contract without specific written approval of the Contracting Officer prior to the acceptance of the final report by the Government. After the Contracting Officer has accepted the final report, distribution will not be restricted by either party except that data relating to the specific location of extant sites will be deleted in distributions to the public.

10.00 METHOD OF PAYMENT

10.01 Payment for all work performed under this contract will be made in a lump sum upon approval of the final report by the Contracting Officer.

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 1

COMBINATION RING LEVEE AND FLOOD BYPASS CHANNEL

The plan would protect the city of Grafton from floods up to and including the standard project flood. Pertinent features include:

- o An 8.7-mile earthen ring levee completely encircling existing developments and lands for future development at Grafton.

- o A 2.9-mile flood bypass channel located north of and adjacent to the levee.

- o Two gated control structures where the levee crosses the Park River to prevent flood flows from affecting protected areas.

- o Interior drainage facilities consisting of ditches, ponding areas, and pumping stations to accommodate stormwater runoff inside the levee.

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 2

FLOOD BYPASS CHANNEL

The plan would protect Grafton and adjacent rural areas. Pertinent features for this plan include:

- o Bypass channel north of Grafton. The channel would be wider than the channel in Plan 1.
- o Interceptor drain upstream and west of Grafton.
- o Tieback levee from the bypass channel inlet to the interceptor drain.
- o 50-year flood protection.

A diversion structure would allow normal low flows through the natural river channel to Grafton and divert flows in excess of channel capacity at Grafton into the bypass channel. The interceptor drain would cut off overland flows, diverting them back into the river with the tieback levees containing these flows to the inlet of the bypass channel.

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 3

CHANNEL IMPROVEMENT AT GRAFTON

The plan would protect Grafton from floods up to and including the 100-year flood. Pertinent features of this plan include:

- o An increase in the natural river channel capacity through Grafton to handle the 100-year discharge.
- o Interceptor drain upstream and west of Grafton.
- o Tieback levee from the upstream end of the improved channel to the interceptor drain.
- o Raises of one highway and two railroad bridges.

ND-A143 683

ARCHEOLOGICAL AND HISTORIC CULTURAL RESOURCES INVENTORY 2/2

FOR A PROPOSED FL. (U) HISTORICAL AND ARCHAEOLOGICAL

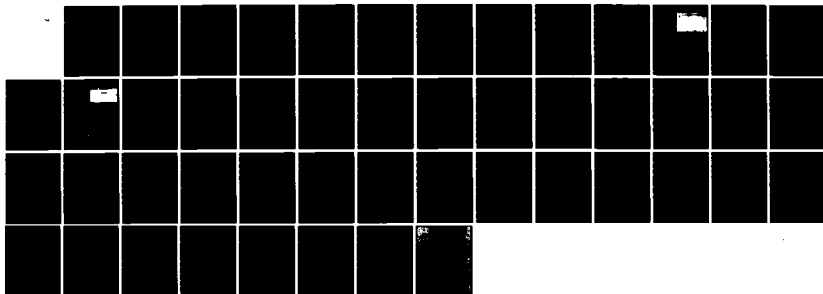
SURVEYS INC MANDAN ND J C DAHLBERG ET AL. OCT 83

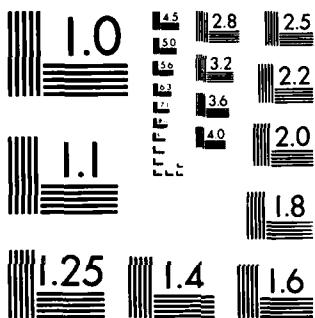
UNCLASSIFIED

DACW37-81-M-2533

F/G 5/6

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 4

UPSTREAM RESERVOIR STORAGE

The plan would consist of one reservoir or a combination of reservoirs to reduce downstream flooding. Upstream reservoir storage could provide major downstream flood damage reduction in the rural areas along the South Branch Park River and reduce total flood damages by approximately 50 percent. Because of the limited drainage area above the reservoir sites, flood damages at Grafton for the major floods would not be significantly reduced, and very little area would be removed from the floodplain.

Plan 4 will not be surveyed.

INCLOSURE 4

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 5

LEVEES AT GRAFTON

This plan would protect Grafton from flooding. Pertinent features include:

- o Ring levee around the section of town north of the river and another ring levee around the section of town south of the river.
- o 1 mile of channel improvement.
- o Relocation of about 15 homes, 3 bridge raises, and 2 bridge removals.
- o Interior drainage facilities consisting of ditches, ponding areas, and pumping stations to accommodate stormwater runoff within the leveed areas.

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 6

COMBINATION CHANNEL IMPROVEMENT AND FLOOD BYPASS CHANNELS

This plan was requested by the city in response to the study initiation letter. Pertinent features of this plan include channel improvements on the Park River at Grafton, improvement of the McCloud Drain south of Grafton, improvement of the Berg Coulee north of Grafton, and a tie-back levee. The McCloud Drain flows east along the south side of town and then north into the Park River. The Berg Coulee flows in an easterly direction and flows into the Park River east of Grafton. The McCloud Drain and Berg Coulee would be used to divert excess flows around Grafton. The plan would provide the city of Grafton with less than 50-year flood protection.

INCLOSURE 6

GRAFTON - PARK RIVER SUBBASIN, NORTH DAKOTA

PLAN 7

NONSTRUCTURAL ALTERNATIVE - COMBINED FLOOD PROOFING AND EVACUATION

A primarily nonstructural plan will be developed and presented as one of the candidate plans in Stage 3 of the planning process. Flood proofing and floodplain evacuation are two kinds of nonstructural alternatives that can reduce existing flood damages. Permanent evacuation of all or most improvements from the floodplain in Grafton is impractical because most of the city and its improvements are in the floodplain, as is much of the surrounding land. Flood proofing, by contrast, shows a greater probability for feasibility because much of Grafton's floodplain sustains water depths of less than 3 feet from the 1-percent chance flood. Thus, the most feasible nonstructural alternative would combine permanent evacuation of improvements from the lowest portions of the floodplain with flood proofing of the improvements in the remainder of the floodplain. In addition to these alternative plans, a combined plan consisting of structural and nonstructural measures will be developed and evaluated.

Plan 7 will not be surveyed.

APPENDIX II

North Dakota Cultural Resource Survey Site Forms

Page 1

OFFICE USE ONLY

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

Date Coded 17 SEPT 1981

NORTH DAKOTA CULTURAL RESOURCES SURVEY

Base Data Form

1. County Walsh
2. Site Number 32WA4
3. Site Name (s) Plant View Homestead
4. Type of Resource: A. Archaeological ☐ Historical ☒ Architectural ☐ Paleontological ☐
B. District ☐ Site ☒ Building ☐ Structure ☐ Object ☐
5. Map Reference: U.S.G.S. 7.5' Topo Quad "Grafton" (1960)
6. Location: SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 7 T 157 N / R 52 W
Plat: Unknown Block None Lot None
BMS: A. B.
C. D.
7. Access: From U.S. Highway 81 bridge over Park River on north Grafton city limit, go 0.2 mi. north on U.S. 81. Turn east, go 0.2 mi. to intersection of a city street, continue another 0.5 mi. bearing left and north along section line road paralleling railroad. Turn east onto half-section line road, cross RR track, go east 390 m along road from RR track. Site is 98 m north of the road at this point.
8. A. General description of site: A patch of unplowed prairie surrounded by a plowed field. This patch has the remnants of a concrete foundation. The concrete chunks are completely silted over, and are scattered too much to reveal the precise form of the foundation. No trees surround the site. The few artifacts include small brick fragments and some small brown glass sherds.

B. Condition of site: Poor
9. Owner's name/address: Unknown
10. Occupant's name/address: Unknown
11. Historic significance value: Nat. ☐ State ☐ Undt. ☒ None ☐ On Reg. ☐ In District ☐ District ☐
12. Open to public: Yes ☒ No ☐ 13. Preservation Underway: Yes ☐ No ☒
14. Endangered by: Grafton Flood Control Project, U.S. Army Corps of Engineers
15. Survey Project: Title Grafton Flood Control - 8120 Director James Dahlberg
Other surveys in which included None P.I. Kent Good
16. Recommendations: Impact analysis
17. Environment: Elevation 252 m Nearest Water: Type Moving stream
Name Park River Distance 780 m Direction South
Soil conditions: Plowed all around site. Site is not plowed.
Soil texture: Sandy loam, friable when dry

27. THEMATIC CATEGORY Euro-American,
Historic farmstead
28. DATE OR PERIOD: probably 1895-1930
29. STRUCTURES: Number Standing: None Number Collapsed: None
- Number of Foundations Only: 1 (One) Number of Earthworks: None
- Number of Basement Depressions: None No. Structural Remains Observed: None
30. ARCHITECTURAL/STRUCTURAL DETAIL:
- A. Style or Design: Unknown
- B. Architect/Engineer: Unknown
- C. Contractor/Builder: Unknown
- D. Original Use: Residence (?)
- E. Present Use: Abandoned. Around the site the field is plowed.
- F. Number of Stories: Unknown G. Basement: Yes No X Partial
- H. Foundation Material: Concrete
- I. Wall Construction: Probably wood
- J. Wall Treatment: Unknown
- K. Roof Type and Material: Unknown
- L. Number of Bays: Front Side M. Plan Shape: Rectangular
31. FRONTAGE: East 32. DISTANCE FROM ROAD: 98 m
33. NUMBER OF OUTBUILDINGS: None
34. DESCRIPTION OF OUTBUILDINGS: None
35. CHANGES: Concrete foundation pieces have been disturbed, but the immediate structure location (11 m by 5 m) has not been plowed.
36. INFORMATION SOURCES/REFERENCES: None known.
37. REASON FOR SIGNIFICANCE: Significance is being determined.

Recorded by: James Dahlberg & Wayne Roberson
HASI

Date: 17 September 1981

Revised by:

Date:

ACCESS: See #34 below.

SITS Number 32WA4

27. THEMATIC CATEGORY Euro-American
28. DATE OR PERIOD: probably 1895-1930
29. STRUCTURES: Number Standing: None Number Collapsed: None
Number of Foundations Only: 1 (One) Number of Earthworks: None
Number of Basement Depressions: None No. Structural Remains Observed: None
30. ARCHITECTURAL/STRUCTURAL DETAIL:
- A. Style or Design: Unknown.
- B. Architect/Engineer: Unknown.
- C. Contractor/Builder: Unknown.
- D. Original Use: Residence (?)
- E. Present Use: Abandoned. Around structure location is plowed.
- F. Number of Stories: Unknown G. Basement: Yes No X Partial
- H. Foundation Material: Concrete
- I. Wall Construction: Probably wood
- J. Wall Treatment: Unknown
- K. Roof Type and Material: Unknown
- L. Number of Bays: Front Side M. Plan Shape: Rectangular
31. FRONTAGE: East 32. DISTANCE FROM ROAD: 98 m
33. NUMBER OF OUTBUILDINGS: No additional structure locations were found.
34. DESCRIPTION OF OUTBUILDINGS:
ACCESS: From U.S. Highway 81 bridge over Park River on north Grafton city limit go 0.2 mi. north on U.S. 81. Turn east, go 0.2 mi. to intersection of a city street, continue another 0.5 mi. bearing left and north along section line road paralleling railroad. Turn east onto half-section line road, cross RR track, go east 390 m along road from RR track. Site is 98 m north of the road at this point.
35. CHANGES: Concrete foundation pieces have been disturbed, but the immediate structure location (11 m by 5 m) has not been plowed.
36. INFORMATION SOURCES/REFERENCES:
37. REASON FOR SIGNIFICANCE:

Recorded by: James Dahlberg and Wayne Roberson,
HASI

Date: 17 September 1981

Revised by:

Date:

Field Code HAS8120-01
PLANT VIEW HOMESTEAD

NDCRS SITE FORM
Map & Photo Section

Page 4

SITS Number 32WA4



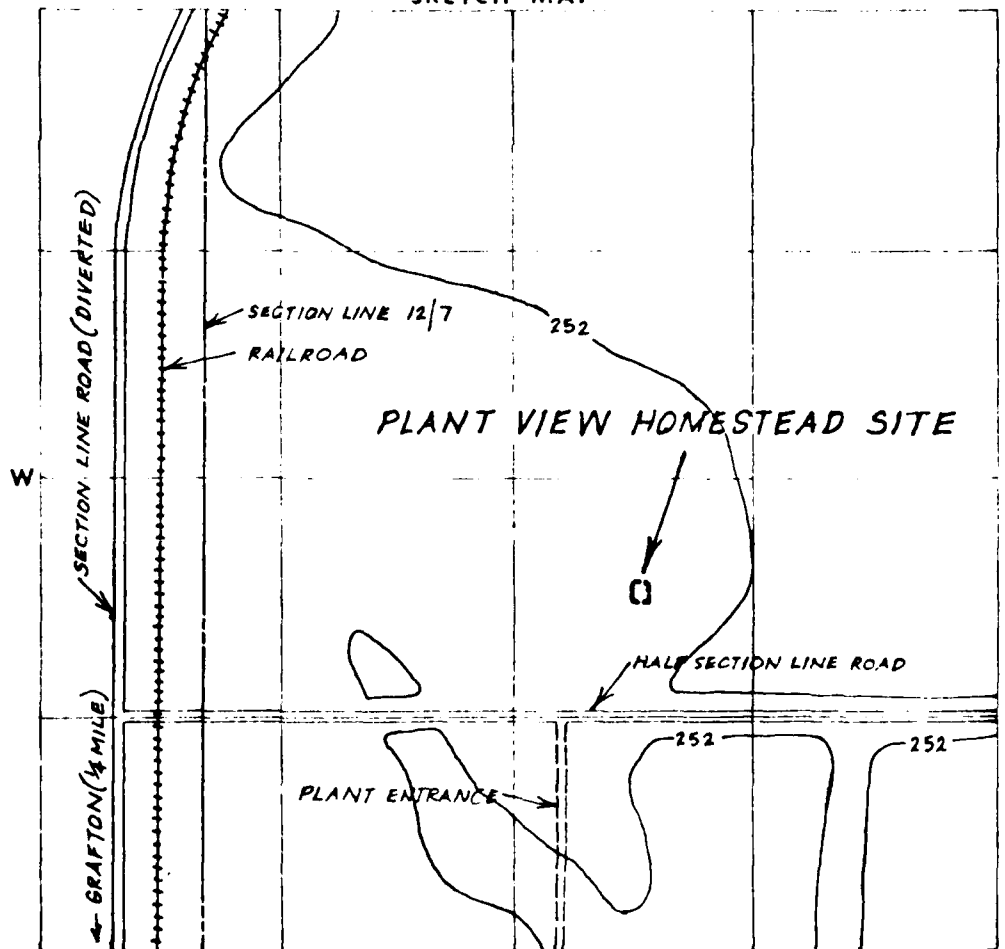
Photo B&W 8120-1-3
I.D. Code Color

Storage Location _____

VIEW OF SITE - LOOKING SOUTH

SKETCH MAP

MAP KEY:
CONTOUR LINE IS
IN METERS ABOVE
MSL.



MAP SCALE:
1 cm = 60M

Recorded by James Dahlberg & Wayne Roberson

Date 17 SEPT 198

NDCRS SITE FORM
ARCHITECTURAL SITES

Page 1

I. SITE I.D.

Field Code	SITS #	
<u>HAS 8130-2</u>	State	County Site Number
	<u>32</u>	<u>WA</u> <u>5</u>
	<u>11</u>	<u>13</u> <u>15</u> <u>18</u>
Site Name	LTL	Twp R Sec QQ QQ Q
<u>RAILROAD BRIDGE</u>	<u>0</u>	<u>157</u> <u>5313</u> <u>6</u> <u>8</u> <u>5</u>
	<u>39</u> <u>40</u>	<u>47</u> <u>48</u> <u>49</u> <u>50</u>
Map Quad	LTL _a	Twp _a R _a Sec _a QQ _a QQ _a Q _a
<u>GRAFTON</u>	<u>69</u> <u>70</u>	<u>77</u> <u>78</u> <u>79</u> <u>80</u>

II. SITE DESCRIPTION

City	Site Area
<u>GRAFTON</u>	<u>529</u> m ²
	<u>16</u> <u>23</u>
Street #	Street Name
<u>24</u> <u>29</u>	<u>30</u> <u>49</u>
Feature #	# of Features
<u>1</u>	<u>1</u>
<u>50</u> <u>51</u>	<u>52</u> <u>53</u>
Orig Use 1	Orig Use 2
<u>19C</u>	<u>0</u>
<u>58</u> <u>60</u>	<u>61</u> <u>63</u>
Year Constructed	Dating Technique
<u>1907</u>	<u>6</u>
<u>70</u> <u>73</u>	<u>74</u>
Structural Comp	Exterior Finish 1 Exterior Finish 2
<u>16</u>	<u>0</u>
<u>79</u> <u>80</u>	<u>1</u> <u>2</u> <u>3</u> <u>4</u>
Architect/Builder	
<u>5</u>	<u>37</u>

IV. C.R.M.

Ownership	Site Condition	Collection	Test	Excavation
<u>3</u>	<u>6</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>38</u>	<u>39</u>	<u>40</u>	<u>41</u>	<u>42</u>
Fieldwork Date	Management Recommendation			
<u>6 3 82</u>	<u>5</u>			
<u>43</u> <u>48</u>	<u>49</u>			
Additional Information				
<u>STEEL SPAN RR BRIDGE, SANDSTONE PIERS</u>				
<u>1</u> <u>40</u>				

OFFICE USE ONLY

OFFICE USE ONLY	Soil Association	Ecozone	Area Signf	CR Type	Verified Site	Non-Site
	<u>41</u> <u>43</u>	<u>44</u> <u>45</u>	<u>46</u>	<u>47</u>	<u>48</u>	<u>49</u>
State Registry	National Register	E C F	T F	MS Number		
<u>50</u>	<u>51</u>	<u>52</u>	<u>53</u>	<u>54</u>	<u>60</u>	

Coder HAS, INC.

Date Coded 3 JUNE 1982

1. ACCESS: From intersection of ND Highway 17 and US Highway 81 travel north along US 81 (Hill Ave.) through city of Grafton for approx. 0.75 mi. Approx. 50 m south US 81 bridge over Park River, turn east (right) onto dirt road, make hard turn north and travel approx. 40 m. Road ends approx. 10 m from south bank of Park River, and approx. 5 m east of south railroad bridge abutment.
2. DESCRIPTION OF SITE: The site consists of a plate steel span railroad bridge across the Park River at the extreme north edge of Grafton, ND. The bridge piers and abutments are constructed of cut sandstone blocks mortared with concrete. The framework is constructed of plate steel.
3. LIST FEATURE(S) BY TYPE & NUMBER: 1 - Plate steel span railroad bridge with sandstone piers and abutments. Items 5, 6, 7, 8, and 9 below are not directly applicable to the bridge. See pages 3 and 5 for further information.
4. LOCATION INTEGRITY: Original Site X Moved (Note Dates):
5. PLAN SHAPE: Apse & Narthex Apse & Transept Apsidal
Circular Cruciform H-Shaped Irregular L-Shaped
Narthex & Transept Polygonal Rectangular Square
T-Shaped U-Shaped Other
6. NUMBER OF STORIES:
7. ROOF SHAPE: Dome False Front Flat Gable Gable,
Bellcast Gable, Center Gable, Cross Gable, Hipped
Gable, Offset Gambrel Hip Hip, Bellcast Hip,
Gabled Hip, Truncated Mansard Mansard, Bellcast
Pyramidal Quonset Saltbox Sawtooth Shed
Valuted/Arched Other
8. ROOF MATERIAL: Unknown Asbestos Shingles Asphalt, Roll
Roofing Asphalt, Shingles Clay Tile Earth/Clay
Metal Tarpaper Wood Shingles Other
9. BASEMENT: Yes No Partial Unknown
10. BASEMENT OR FOUNDATION MATERIAL: Unknown Brick Clay Tile
Concrete, Block Concrete, Poured/Precast Concrete,
Simulated Stone Block Earthen Brick/Adobe Log
Rammed Earth/Puddled Clay Sod Steel Frame Stone, Cut X
Stone, Random Stone, Slab Wood Other

NDCRS ARCHITECTURAL SITE FORM

Field Code HAS 8120-2

Descriptive Section

SITS Number 32WHS

Page 3

11. DESCRIBE ALTERATIONS (Note Dates): Not aware of any alterations. The sandstone piers and abutments are the originals--constructed in 1907. The structural steel rails and ties may have been modified or replaced since 1907.
12. SAMPLES COLLECTED: None
13. LOCATION OF SAMPLES: NA
14. OWNER'S NAME, ADDRESS, & PHONE #: Burlington Northern Railroad
15. PREVIOUS OWNERS (Note Dates): Great Northern Railroad originally built or had the bridge built in 1907.
16. MAP SOURCES CHECKED (Note Dates): Plat Map _____ County Atlas _____ Topographic Map 1960 Sanborn Map _____ Other Insurance Map _____ Other
17. OTHER HISTORICAL INFORMATION: The St. Paul, Minneapolis and Manitoba Railroad (later called Great Northern) arrived at Grafton on 21 Dec. 1881 (Berg 1976). Whether a bridge across the Park River had been constructed at that time is unknown. The Great Northern Railroad had constructed a bridge at the site of the present bridge by 1884 (Andreas 1884). The present bridge was constructed in 1907 (Burlington Northern Engineers Office 1982).
18. PROJECT TITLE: Grafton COE Flood Control Pro. Project Supervisor(s): Kent Good
19. REPORT TITLE: See item 22 below. Author(s): James C. Dahlberg, Wayne R. Roberson, Michele H. Schreiner, and Subcontractor Joseph Roberts, Historical Research, Inc.
20. STATEMENT OF INTEGRITY: The railroad bridge was built in 1907 by or for the Great Northern Railroad. The structure retains at least the original 1907 cut sandstone piers and abutments. The structure appears in excellent condition and there are no short-range plans to alter it structurally (Burlington Northern Engineers Office 1982).
21. STATEMENT OF SIGNIFICANCE: This bridge represents a style common for large railroad bridges built in the Red River Valley in the early 1900s. This structure may represent the only example of a railroad bridge with sandstone piers and abutments in the Red River Valley (Fossum 1982).
22. COMMENTS/REFERENCES: Report Title: Archaeological and Historical Resources Inventory for a Proposed Flood Control Project at Grafton, Walsh County, North Dakota.
Other references: Berg, Gundar 1976. Walsh Heritage (2 vols.). Walsh County Historical Society. Grafton, ND. See continuation form, page 5, for other references.

Recorded by J.C. Dahlberg and J. Kjos, HASIDate 3 June 1982

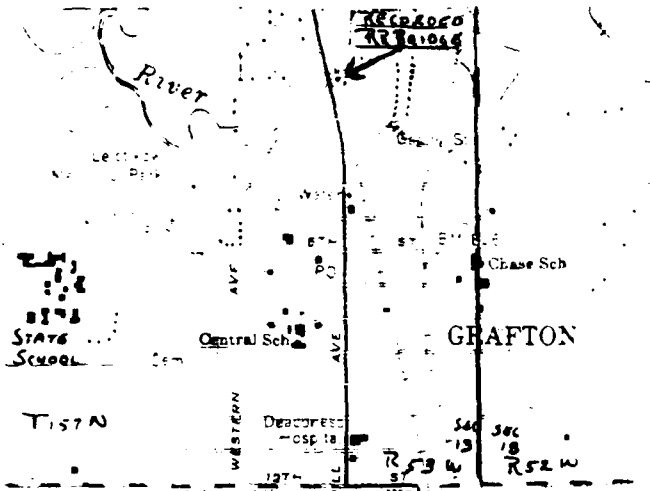
B.W. ☒ Color ☐Photo I.D. Code HAS 8120 R3-0451Storage Location HAS LaboratoryGRAND FORKS, ND

PHOTO VIEW TO THE NORTHWEST

SKETCH MAP

Sketch Map:

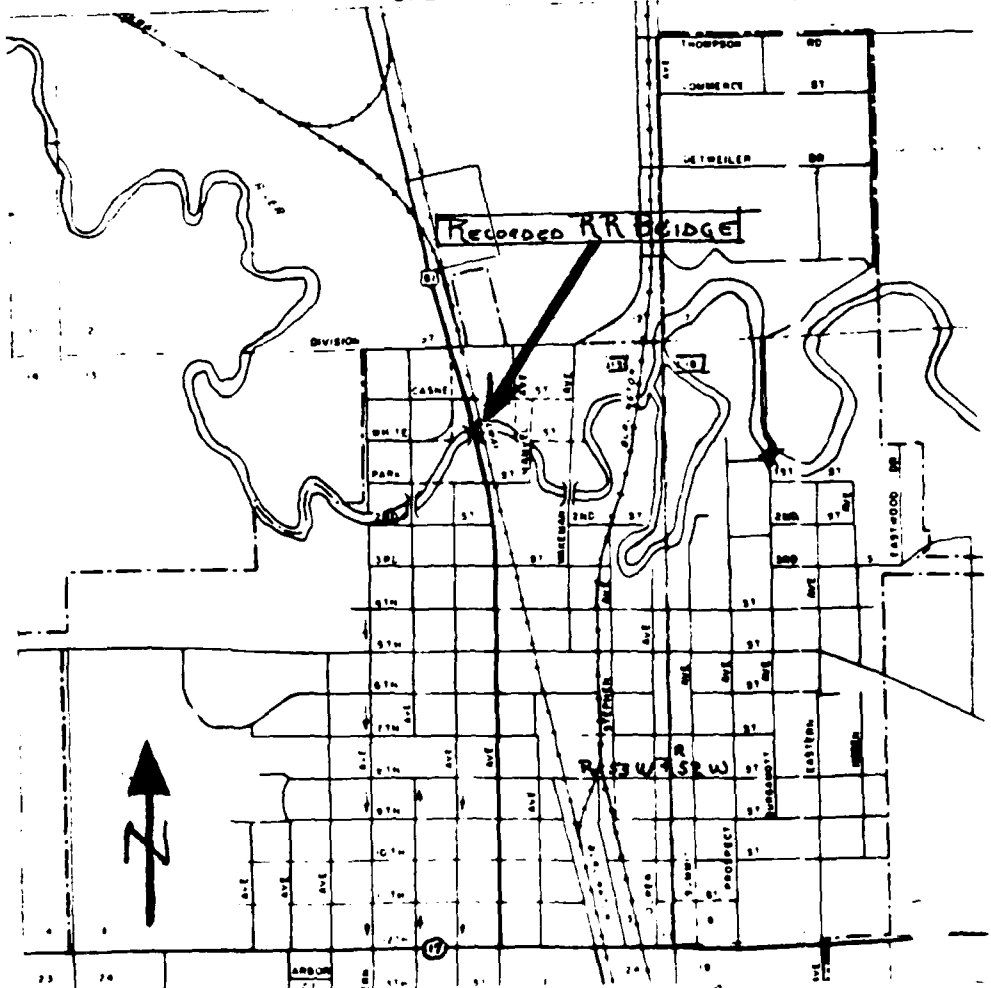
Include north arrow,
individual numbered
features, artifact
loci, and road or
street names.

Architectural sites:
include roof ridge(s)
and dimensions of
site.

Map Key:

ADAPTED FROM A MAP
OF "THE CITY OF GRAFTON"
ATLAS OF WALSH COUNTY
PUBLISHED BY THE MIDLAND
ATLAS COMPANY INC. MILBANK
SOUTH DAKOTA - 1981

Map Scale: NO SCALE
GIVEN

Recorded by A. P. DAHLBERG & A. KARS HAS1Date 3 June 1983

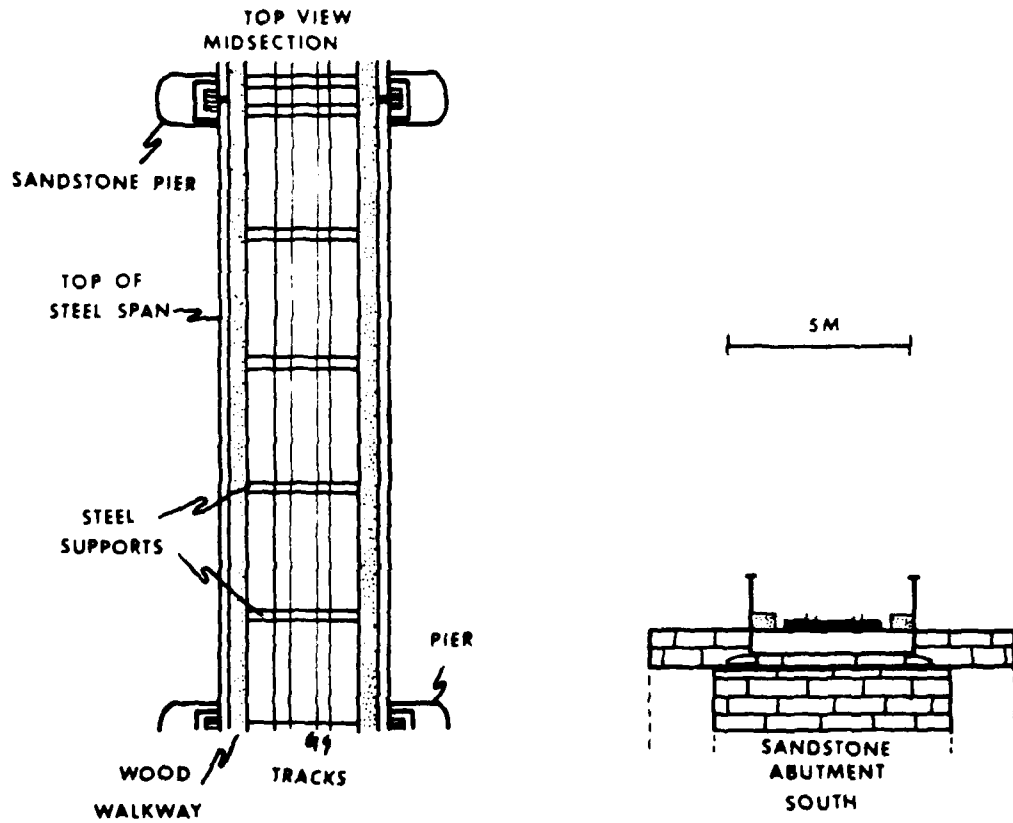
Item 22, continued:

Andreas. 1884. Andreas Historical Atlas of North Dakota. Chicago, IL:R.P. Donnerley and Sons.

USGS 7.5' Topographic Quadrangle Map, "Grafton, N.Dak." (1960).

Burlington Northern Engineers Office. 1982. Personal communication. Telephone conversation between J.C. Dahlberg and Burlington Northern Engineers Office, held on 19 May 1982.

Fossum. 1982. Personal communication. Interview conducted by J.C. Dahlberg with Fossum--Acting Supervisor of Bridges and Structures, Burlington Northern Grand Forks Office--on 28 May 1982.



GRAFTON STEEL SPAN RAILROAD BRIDGE



APPENDIX III

Shovel Test Forms

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.

Shovel Test Form

PROJECT: Grafton Flood Control

SITE NAME: NA

SITE NUMBER: NA

SITE TYPE: NA

COUNTY/STATE: Walsh, North Dakota

PIT NUMBER: 1

TEST LOCATION: SE1/4 NW1/4 NW1/4

Sec. 13, T157N, R53W - south bank Park River in Leistikow City Park,
Grafton

TEST SIZE: 0.5 m²

TEST DEPTH: 0.5 m

SURFACE CHARACTERISTICS: Prairie grasses and riverine vegetation;
washing machine motor on surface

SUBSURFACE SOIL CHARACTERISTICS: Topsoil of dark silty loam extends from
the bottom of the sod layer (0 to 5 cm below surface) to a depth of
approximately 30 cm below surface. No apparent plow zone was noted.
From approximately 30 cm to 35 cm below surface, soil becomes a lighter
clayey loam, with increasing sand content. From 35 cm to bottom of pit
(approximately 50 cm below surface), soil becomes a light, extremely sandy
clay, with increasing amounts of gravel.

CULTURAL MATERIAL: Motor parts of a washing machine on surface. Nothing
was noted below the sod layer.

COMMENTS: Cultural debris (washing machine parts) was not encountered
below surface.

RECORDER: J.C. Dahlberg & W. Roberson DATE: September 1981

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.

Shovel Test Form

PROJECT: Grafton Flood Control

SITE NAME: NA

SITE NUMBER: NA

SITE TYPE: NA

COUNTY/STATE: Walsh, North Dakota

PIT NUMBER: 2

TEST LOCATION: NE1/4 NW1/4 NW1/4

Sec. 13, T157N, R53W - south bank Park River in Leistikow City Park,
Grafton

TEST SIZE: 0.5 m²

TEST DEPTH: 0.5 m

SURFACE CHARACTERISTICS: Prairie grasses and riverine vegetation;
washing machine door on surface

SUBSURFACE SOIL CHARACTERISTICS: Topsoil of dark silty loam extends from
the bottom of the sod layer (0 to 5 cm below surface) to a depth of
approximately 30 cm below surface. No apparent plow zone was noted.
From approximately 30 cm to 35 cm below surface, soil becomes a lighter
clayey loam, with increasing sand content. From 35 cm to bottom of pit
(approximately 50 cm below surface), soil becomes a light, extremely sandy
clay, with increasing amounts of gravel.

CULTURAL MATERIAL: Washing machine door frame on surface. Nothing was
noted below the sod layer.

COMMENTS: Cultural debris (washing machine parts) was not encountered
below surface.

RECORDER: J.C. Dahlberg & W. Roberson DATE: September 1981

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.

Shovel Test Form

PROJECT: Grafton Flood Control

SITE NAME: Plant View Homestead SITE NUMBER: 32WA4

SITE TYPE: historic homestead COUNTY/STATE: Walsh, North Dakota

PIT NUMBER: 1 TEST LOCATION: 2 m west of north-
south trending foundation remnant (possible structure interior)

TEST SIZE: 0.5 m²

TEST DEPTH: 0.5 m

SURFACE CHARACTERISTICS: Short/medium prairie grasses

SUBSURFACE SOIL CHARACTERISTICS: Topsoil of dark sandy loam extends from the bottom of the sod layer (0 to 5 cm below surface) to a depth of approximately 35 cm below surface. No apparent plow zone was noted. From approximately 35 cm to 40 cm below surface, soil becomes a lighter clayey loam, with increasing sand content. From 40 cm to bottom of pit (approximately 50 cm below surface), soil becomes a light, sandy clay, with increasing amounts of gravel.

CULTURAL MATERIAL: None.

COMMENTS: None.

RECORDER: J.C. Dahlberg & W. Roberson DATE: September 1981

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.

Shovel Test Form

PROJECT: Grafton Flood Control

SITE NAME: Plant View Homestead SITE NUMBER: 32WA4

SITE TYPE: historic homestead COUNTY/STATE: Walsh, North Dakota

PIT NUMBER: 2 TEST LOCATION: 2 m south of east-
west trending foundation remnant.

TEST SIZE: 0.5 m²

TEST DEPTH: 0.5 m

SURFACE CHARACTERISTICS: Cultivated field--recently harvested

SUBSURFACE SOIL CHARACTERISTICS: Topsoil of dark sandy loam extends from the bottom of the sod layer (0 to 5 cm below surface) to a depth of approximately 40 cm below surface. Plow zone appears to extend to about 25 cm below surface. Below the plow zone, soil is considerably more compact. From 40 cm to 45 cm below surface, soil becomes lighter clayey loam. From 45 cm to bottom of pit (50 cm below surface), soil changes to a light sandy clay with increasing amounts of gravel.

CULTURAL MATERIAL: Cobble-sized pieces of concrete and pieces of rusted wire appear occasionally to a depth of about 25 cm below surface (i.e., the bottom of the plow zone).

COMMENTS: Cultural debris (concrete and wire) apparently has been scattered and mixed by plowing.

RECORDER: J.C. Dahlberg & W. Roberson DATE: September 1981

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.

Shovel Test Form

PROJECT: Grafton Flood Control

SITE NAME: Plant View Homestead SITE NUMBER: 32WA4

SITE TYPE: historic homestead COUNTY/STATE: Walsh, North Dakota

PIT NUMBER: 3 TEST LOCATION: 5 m west of north-
south trending foundation remnant (outside of structure)

TEST SIZE: 0.5 m²

TEST DEPTH: 0.5 m

SURFACE CHARACTERISTICS: Cultivated field--recently harvested

SUBSURFACE SOIL CHARACTERISTICS: Topsoil of dark sandy loam extends from the bottom of the sod layer (0 to 5 cm below surface) to a depth of approximately 40 cm below surface. Plow zone appears to extend to about 25 cm below surface. Below the plow zone, soil is considerably more compact. From 40 cm to 45 cm below surface, soil becomes lighter clayey loam. From 45 cm to bottom of pit (50 cm below surface), soil changes to a light sandy clay with increasing amounts of gravel.

CULTURAL MATERIAL: Two or three cobble-sized pieces of concrete and a few broken pieces of brown bottle glass were found in the plow zone to a depth from 20 cm to 25 cm below surface.

COMMENTS: Cultural debris (concrete and bottle glass) apparently has been scattered and mixed by plowing.

RECORDER: J.C. Dahlberg & W. Roberson DATE: September 1981

APPENDIX IV

Vitae

VITA

Name: Kent N. Good

Date and Place of Birth: 29 June 1946, Great Falls, Montana

Present Position: Research Archaeologist and President
Historical and Archaeological Surveys, Inc.
2207 Springbrook Court
Grand Forks, ND 58201

Education: University of Montana, B.A., 1964-69
University of Montana, M.A., 1969-74

Teaching Experience: 1970-72, Graduate Assistant, University of Montana
1972-73, Instructor, University of North Dakota

Research Experience: 1972-79, Associate Research Archaeologist,
University of North Dakota
1979-81, Research Archaeologist, Historical
and Archaeological Surveys, Inc.

Research: (Conducted for University of North Dakota Archaeological Research)

1970, Archaeological Survey of the Pryor Mountain-Bighorn
Canyon Recreation Area, June-Sept.

1971, Field Supervisor, Archaeological Excavation in the
Pryor Mountain-Bighorn Canyon Recreation Area, June-Sept.

1972, Field Supervisor, National Park Service, Archaeological
Salvage of the Pryor Mountain-Bighorn Canyon National Recrea-
tion Area Road - Phase II.

1973, Field Supervisor, National Park Service, Crow Tribal
Land Archaeological Survey.

1973, Field Supervisor, Corps of Engineers, Archaeological
Excavation of the Moe Site (32MN101), Lake Sakakawea, North
Dakota.

1973, Field Supervisor, Bureau of Reclamation, Archaeological
Survey of the Patterson Lake and Versippi Reservoir, North
Dakota.

1974, Field Supervisor, Archaeological Survey of the Turtle
River Watershed, Forest River Watershed, North Dakota, Soil
Conservation Service.

1974, Field Supervisor, Archaeological Survey of the Route of
the Proposed Dome Pipeline, North Dakota State Historical
Society.

1974, Field Supervisor, Archaeological Survey of the Shoreline of Lake Homme, North Dakota.

1974, Field Supervisor, Archaeological Excavation at the Pretty Creek Archaeological Site, Pryor Mountains, Montana, National Park Service.

1975, Field Supervisor, Archaeological Survey of the Warwick-McVille Proposed Canal Route, Garrison Diversion and Proposed Recreation Areas, North Dakota. Bureau of Reclamation.

1976, Field Supervisor, Archaeological Investigations in the LaMoure-Oakes and Wild Rice River Project Areas, LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. Bureau of Reclamation.

1977, Principal Investigator, Archaeological Test Excavation of the Highway 8 Site, 32DU2, Garrison Reservoir, North Dakota. U.S. Army Corps of Engineers, Omaha District.

1977, Field Supervisor, Archaeological Survey of Burlington Dam/Lake Darling, North Dakota. U.S. Army Corps of Engineers, St. Paul District.

1978, Principal Investigator, Archaeological Test Excavation of the Anderson Tipi Ring Site (32ML111) for the Falkirk Mining Company, Bismarck, North Dakota.

1978, Principal Investigator, Archaeological Test Excavations of Three Sites within Affected Areas of the Proposed Burlington Dam, Souris River Basin, North Dakota. U.S. Army Corps of Engineers, St. Paul District.

1979, Principal Investigator, An Archaeological Survey of a Coal Mine Development for the Falkirk Mining Company, Bismarck, North Dakota.

(Conducted for Historical and Archaeological Surveys, Inc.)

1979, Principal Investigator, Archaeological and Historical Survey, Proposed Haul Road and Watershed Project. Indian Head Mine, North American Coal Company, Bismarck, North Dakota.

1979, Principal Investigator, Archaeological Supplementary-- Literature Consolidation Report for North American Coal Company, Bismarck, North Dakota.

1979-80, Principal Investigator, Archaeological Test Excavation, Survey of Mine Area and Oral History Research, Mercer County, North Dakota. Coteau Properties, North American Coal Company, Bismarck, North Dakota.

1980, Principal Investigator, Test Excavation of Sites 32ME217 and 32ME218, Section K, Indian Head Mine, North Dakota.

1980, Principal Investigator, Class III Cultural Resource Inventory, Proposed State Highway 16 Improvement, North Dakota.

1980, Principal Investigator, Cultural Resource Inventory, Proposed Power Plant Site, Otter Tail Power and Stearns-Roger Engineering, North Dakota.

1981, Principal Investigator, Mitigation Plan, Phase I for the Saskatchewan Intertie Transmission Line Right-of-Way, Northwestern North Dakota, Basin Electric Power Cooperative.

1981, Principal Investigator, Cultural Resource Assessment of the Proposed Mining Area, McLean County, North Dakota, The Falkirk Mining Company.

Publications:

1973, Preliminary Land Use, Environmental and Socio-Economic Assessment of the Warroad River and Bull Creek Drainage Area, Minnesota. Richard Bares, Paul B. Kannowski, Ralph D. Kingsbury, Phyllis E. Moen, John R. Reid, Nikki R. Seabloom, co-authors. Institute for Ecological Studies, University of North Dakota, Research Report #4.

1973, Environmental Impact Assessment of the Roseau River, Minnesota. John R. Reid, Ronald J. Hall, Richard Bares, Donald L. Rubbelke, Phyllis Moen, Larry J. Dobesh, co-authors. Institute for Ecological Studies, University of North Dakota, Research Report #5.

1974, A Survey and Synthesis of Archaeological Sites within the Sub-Alpine Ecological Zone, Pryor Mountains, Montana. M.A. Thesis on file at the University of Montana, unpublished.

1974, The Results of the Archaeological Survey in the Grapevine Creek Area, Bighorn Canyon National Recreation Area--1972 Field Season. National Park Service. Lawrence L. Loendorf, co-author.

1975, The Results of the Archaeological Survey of Crow Tribal Lands, Bighorn Canyon National Recreation Area--1972 Field Season. National Park Service.

1976, Preliminary Report of the Cultural Resource Inventory of Portions of the Central North Dakota Section, Garrison Diversion Unit, North Dakota. National Park Service. Frederick Schneider and Kurt Schweigert, co-authors.

1976, Archaeology Investigations in the LaMoure-Oakes Project Area, Garrison Diversion, North Dakota. National Park Service. James C. Dahlberg, William Tibesar, and Susan Vehik, co-authors.

1976, The Commissary Ridge Bison Kill (24LM363). Archaeology in Montana 17(1 & 2). Lawrence L. Loendorf, co-author.

1977, Archaeological Investigations of the Hendrickson III Site--32SN403, LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. Bureau of Reclamation. James Dahlberg, Thomas Larson, Bruce Benz, and Frederick Schneider, co-authors.

1977, Archaeological Investigations in the LaMoure-Oakes and Wild Rice River Project Areas, LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. Bureau of Reclamation. Willard Kinney, Carmen Greenshields, and Bruce Benz, co-authors.

1977, Archaeological Test Excavation of the Highway 8 Site, 32DU2, Garrison Reservoir, North Dakota. Omaha District, Corps of Engineers. Jeffrey L. Hauff, co-author.

1977, Fortification Sites in the Bighorn Canyon Area. Archaeology in Montana 18(2 & 3). Lawrence L. Loendorf, co-author.

1978, An Archaeological Survey: Shoreline of Lake Darling and Proposed Burlington Dam, Flood Control Project Area, Upper Souris River, North Dakota. St. Paul District, Corps of Engineers. Richard A. Fox, co-author, with contributions by Michele Schreiner.

1978, Archaeological Test Excavation at the Anderson Tipi Ring Site (32ML111), McLean County, North Dakota: A Cultural Resource Study in Central North Dakota. Falkirk Mining Company, Bismarck, North Dakota. Jeffrey L. Hauff, co-author.

1980, A Cultural Resource Assessment of the Pembilier Lake and Dam Flood Control Project (A Literature and Records Search), Pembina River, Pembina and Cavalier Counties, North Dakota. James C. Dahlberg and Larry J. Sprunk, co-authors.

1980, Test Excavation of Two Archaeological Sites (32ME217 and 32ME218) within Section K, Indian Head Mine, North American Coal Company. John M. Logan, co-author.

1980, Results of a Class III Cultural Resource Inventory, Route and Alternates of the Proposed State Highway 16 Improvement in Golden Valley and McKenzie Counties, North Dakota. John M. Logan, co-author.

1981, Results of a Literature Search and Class III Cultural Resource Inventory of Two Proposed Sites for the Location of a Coal-fired Power Plant near Spiritwood, North Dakota. Kurt P. Schweigert, John M. Logan and Cecelia F. Jones, co-authors.

1981, Final Report Historical and Archaeological Survey and Testing Project, Proposed Mining Area - The Coteau Properties Company, Antelope Valley, Mercer County, North Dakota. James C. Dahlberg, Larry Sprunk, and John Logan, co-authors.

1981, Final Report Historical and Archaeological Survey and Testing Project - Proposed Mining Area - Falkirk Mine, McLean County, North Dakota. James C. Dahlberg, Wayne Roberson, Larry Sprunk, and Carl Freuden, contributors. Co-edited with Michele H. Schreiner.

1981, Final Report Mitigation Plan Phase I for the Saskatchewan Intertie Transmission Line Right-of-Way, Northwestern North Dakota. James C. Dahlberg, co-author.

Papers Read at Professional Meetings:

1975, "The Lisbon Burial - A Possible Middle Missouri Burial," read at the Plains Anthropological Conference, Lincoln, Nebraska, November.

1978, "Results of the Archaeology Survey of the Proposed Burlington Dam Project," read at the Association of Manitoba Archaeologists Conference, Winnipeg, Manitoba, May.

1979, "The Archaeology of the Anderson Tipi Ring Site, North Dakota," read at the Joint Plains-Midwest Archaeological Conference, Grand Forks, North Dakota, April.

Foreign Language: French

Research Interests: North American Prehistory, Early Hunters and their
Lithic Technology, Nomadic Peoples of the Plains

Memberships: Sigma Xi
Plains Anthropological Conference
Plains Anthropologist

VITA

Name: Wayne R. Roberson

Education: Wm. Fleming H.S., Roanoke, VA Grad. 1960
Univ. Virginia Branch, Roanoke, VA 1 yr. academic, 1961
Virginia Polytechnic Inst., Blacksburg, VA 2 yrs. Architecture
1961, 1963
Univ. Oklahoma, Norman, OK 1 sem. academic, 1964
Univ. Cincinnati, Cincinnati, OH 1 sem. Architecture, 1967
Univ. Cincinnati, Cincinnati, OH B.A. Anthropology, 1970
Univ. Texas at Austin, TX M.A. Anthropology, 1972

Present Position:

Historical and Archaeological Surveys, Inc.
2207 Springbrook Court
Grand Forks, ND 58201
(701) 746-0810 or 775-5090

Research: (Supervised)

- 1968 Laboratory analysis (bio specimens, utilized flakes), Univ. Cincinnati; R.L. Ford
- 1971-72 Archaeological survey, historic documents research, oral history interviews, Univ. Texas, Dept. Anthropology; T.N. Campbell and W.W. Newcomb, Jr.
- 1971-72 Photography, surveys, excavations, lab procedures, etc., Texas Historical Commission; C.O. Tunnell, J.D. Scurlock, and J. Malone
- 1972 Report preparation, Texas Historical Commission; J.D. Scurlock
- 1973 Field survey and test excavation, St. Augustine, TX; K. Gilmore
- 1973 Excavations, Spanish translations, and lab analysis, Texas Parks & Wildlife Dept., Austin, TX; D. Lorraine
- 1973 Historic documents research and report preparation, Texas Archaeological Survey, Austin, TX; D. Dibble
- 1980 Mondak Bridge Survey, McKenzie, Co., ND; Survey, test excavations, documents research, and oral history interviews; F. Schneider

(As Principal Investigator/Field Director)
- 1973-76 Ft. Lancaster St. Historic Site, TX; Excavations at military fort, materials' stabilization experiments, adobe reconstruction, documents research, oral history interviews, etc.

Ft. Leaton St. Historic Site, TX; Excavations at chapel of Mexican-Colonial trading post

Sabine Pass Battleground St. Historical Park, TX; Excavations at Civil War fort, documents research, oral history interviews

Ft. Richardson St. Historic Site, TX; Test excavation at Bakery of U.S. military fort

Palo Duro St. Park, TX; Test excavation at historic dugout

Sea Rim State Park, TX; Archaeological survey

San Jacinto Battleground St. Monument, TX; Test excavations and survey

Mineral Wells State Park, TX; Archaeological Survey

Landmark Inn St. Historic Site, TX; Excavations, documents research

Sam Bell Maxey House, Paris, TX; Excavations, oral history interviews

San Jose Mission, San Antonio, TX; Test excavations

Rice Family Log Home, Neches, TX; Survey and test excavation

McKinney Falls St. Park, TX; Excavations at Horse Trainer's house

(As Principal Investigator)

1973-76 Mission Rosario, TX; 17 weeks field excavations

Ft. Leaton St. Historic Site, TX; Excavations

Ft. Richardson St. Historic Site, TX; Excavations

Ft. McKavett St. Historic Site, TX; Excavations

Ft. Lipantitlan, TX; Test excavations and survey

San Jose Mission, San Antonio, TX; Excavations

Landmark Inn St. Historic Site, TX; Excavations

San Jacinto Battleground St. Monument, TX; Excavations

Mineral Wells St. Park, TX; Test excavations

L.B.J. St. Park, TX; Excavations

Ft. Griffin St. Park, TX; Excavations

Falcon Reservoir, TX; Survey

McKinney Falls St. Park, TX; Excavations and field school

(As Field Director)

1979-81 South Beulah Mine Extension, Mercer Co., ND; Test excavations and report preparation

Mondrian Tree Site, McKenzie County, North Dakota; Test excavations and report preparation

Northern Border Pipeline, North Dakota; Test excavations and report preparation

Northern Border Pipeline Crossing of Lake Oahe, Morton County, North Dakota; Excavations at 32M060, documents research, and oral history interviews

(Other Research)

1978-81 Mayan Calendar Studies

1981 Cultural Resource Assessment of the Proposed Mining Area, McLean County, North Dakota; The Falkirk Mining Company. Report preparation

Publications

1972 The Study of Extinct Rural Communities in the United States: A Test of Feasibility. M.A. Thesis, Univ. Texas, Austin.

1974 The Carrington-Covert House; Archeological Investigation of a 19th Century Residence in Austin, Texas. Texas Historical Commission, Office of the State Archeologist Reports, Number 25.

1974 Anglo-American Ceramics, in: Mission Rosario; Archeological Investigations 1973, by Kathleen Gilmore. Archeological Report 14, Part 1, Texas Parks and Wildlife Department, Austin.

1974 Archeological Narrative, in: Preservation Plan and Program for Rice Family Log Home, Houston County, Texas. Knox et al., Texas Parks and Wildlife Department, Austin.

1974 (Co-authored with Paul R. McGuff) Lower Sabine and Neches Rivers, Texas and Louisiana: A Study of the Prehistoric Resources in Areas under Investigation for Navigation Improvement. Research Report 46, Texas Archeological Survey, University of Texas, Austin.

1974 (Co-authored with J. David Ing) Fort Leaton State Historic Site: Summary of Archeological Investigations, and Excavation of Chapel, 1973. Archeological Report Number 15, Texas Parks and Wildlife Department, Austin.

1976 Archeological Narrative, in: Preservation Plan and Program for Fort Lancaster State Historic Site, Crockett County, Texas. Knox et al., Texas Parks and Wildlife Department, Austin.

1976 (Co-authored with T. Holtzapple) Sabine Pass Battleground State Historical Park, Jefferson County, Texas; Archeological Investigations. Texas Parks and Wildlife Department, Austin.

- 1978 Mayan Calendar, An Almanac; Volume 1. Downhome General Store, Austin.
- 1980 West Study Area, South Beulah Mine Extension, Mercer County, North Dakota; Cultural Resources Survey and Test Excavations. Department of Anthropology and Archaeology, University of North Dakota.
- 1980 Archaeological Test Excavations at the Mondrian Tree Site (32MZ58), McKenzie County, North Dakota; with a Chapter on Faunal Analysis by Emily G. Lovick. Department of Anthropology and Archaeology, University of North Dakota.
- 1981 Mayan Calendar, 1981. Downhome General Store, Grand Forks.
- 1981 (Co-authored with Fred Schneider) Cultural Resource Inventory of the Mondak Bridge Project. Department of Anthropology and Archaeology, University of North Dakota.
- 1981 (Co-authored with Cindy Parish) Northern Border Pipeline, North Dakota: Historic Sites Testing and Evaluation. Department of Anthropology and Archaeology, University of North Dakota.
- 1981 (Co-authored with James C. Dahlberg, Larry Sprunk and Carl Freuden; Edited by Kent N. Good and Michele H. Schreiner) Final Report Historical and Archaeological Survey and Testing Project - Proposed Mining Area - Falkirk Mining Area - Falkirk Mine, McLean County, North Dakota. Historical and Archaeological Surveys, Inc. Grand Forks.

Professional Organizations

Society for Historical Archaeology, 1973 to present

Texas Archeological Society, 1974 to present

Society for American Archaeology, 1974-1976

Society of Professional Archeologists, 1976 to present, with emphases:

Field Research

Collections Research

Theoretical, Archival Research

Archeological Administration

Cultural Resource Management

Historical Archeology

VITA

Name: James C. Dahlberg

Place of Birth: Butte, Montana

Present Position: Chief Archaeological Researcher and Photographer
Historical and Archaeological Surveys, Inc.
2207 Springbrook Court, Grand Forks, North Dakota

Education: 1968-1973, B.A., University of Montana
1978, M.A. Credits, Iowa State University

Previous Positions: 1973-1977, Research Assistant, Department of Anthropology, University of North Dakota
1977-1978, Advanced Research Assistant and Graduate Assistant, Iowa State University
1979, Advanced Research Assistant and Photographer, Department of Anthropology and Archaeology, University of North Dakota
1979, Advanced Research Assistant and Photographer, Department of Anthropology, University of Montana
1979-present, Chief Archaeological Researcher and Photographer, Historical and Archaeological Surveys, Inc.

Research:

Field - 1973, Archaeological Excavation of the Pretty Creek Archaeological Site, Pryor Mountains, Montana.

1974, Archaeological Survey of the Turtle River Watershed, North Dakota.

1974, Archaeological Survey of the Route of the Proposed Dome Pipeline, North Dakota

1974, Excavation of the "Fort Smith Burial," Yellow Tail Dam, Montana.

1975, Assistant Supervisor, Archaeological Test Excavation along the James River and Proposed Taayer Reservoir, South Central North Dakota.

1976, Archaeological Survey and Test Excavation of the James River Valley, Garrison Diversion Bank Stabilization Project, North Dakota.

1978, Archaeological Survey and Test Excavation of the Saylorville Reservoir Project, Central Iowa.

1978, Archaeological Survey and Photography of Falkirk Mining Project, Central North Dakota.

1979, Archaeological Excavation and Photography of Spring Creek Mining Project, South Central Montana.

Lab - 1973-1977, Research Assistant, Department of Anthropology and Archaeology, University of North Dakota, Grand Forks--involved in laboratory duties for a large number of field reports.

1977-1978, Ceramic analysis for the Department of Anthropology, Iowa State University.

1979, Advanced Research Assistant, Department of Anthropology and Archaeology, University of North Dakota, Grand Forks--involved in writing field report of the Pretty Creek Archaeological Site - 24CB4 & 5, Montana.

(Conducted for Historical and Archaeological Surveys, Inc.)

1980, Chief Researcher, Literature and Records Search, Pembilier Lake and Dam Flood Control Project, St. Paul District, Corps of Engineers. Pembina and Cavalier counties, North Dakota.

1980, Chief Researcher and Photographer, Cultural Resource Assessment of Twelve Known Archaeological and Five Known Historic Sites, Coteau Properties Company, Mercer County, North Dakota.

1980, Chief Researcher and Photographer, Cultural Resource Assessment of the Proposed State Highway 16 Improvement, State Highway Department, Golden Valley and McKenzie counties, North Dakota.

1980, Chief Researcher and Photographer, Cultural Resource Assessment of Two Sites Proposed for the Location of a Coal-fired Power Plant near Spiritwood, North Dakota.

1981, Chief Researcher, Mitigation Plan, Phase I for the Saskatchewan Intertie Transmission Line Right-of-Way, Northwestern North Dakota, Basin Electric Power Cooperative.

1981, Chief Researcher, Cultural Resource Assessment of the Proposed Mining Area, McLean County, North Dakota. The Falkirk Mining Company.

Publications:

1976, Archaeological Investigations in the LaMoure-Oakes Project Area, Garrison Diversion, North Dakota. National Park Service. Kent N. Good, William Tibesar, and Susan Vehik, co-authors.

1977, Archaeological Investigations of the Hendrickson III Site - 32SN403. LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota. Bureau of Reclamation. Kent N. Good, Thomas Larson, Bruce Benz and Fred Schneider, co-authors.

1979, Archaeological Excavations at the Garrison Tipi Ring Site, 32ML117, McLean County, North Dakota: An Archaeological Salvage Project. Kent N. Good, co-author.

1979, Archaeological Survey of a Coal Mine Development for the Falkirk Mining Company, McLean County, North Dakota. Kent N. Good, co-author.

1980, A Cultural Resource Assessment of the Pembilier Lake and Dam Flood Control Project (A Literature and Records Search), Pembina River, Pembina and Cavalier Counties, North Dakota. U.S. Army Corps of Engineers, St. Paul District. Kent N. Good and Larry J. Sprunk, co-authors.

1981, Final Report Historical and Archaeological Survey and Testing Project, Proposed Mining Area - The Coteau Properties Company, Antelope Valley, Mercer County, North Dakota. Kent N. Good, Larry Sprunk, and John Logan, co-authors.

1981, Final Report Historical and Archaeological Survey and Testing Project - Proposed Mining Area - Falkirk Mine, McLean County, North Dakota. Wayne Roberson, Larry Sprunk, and Carl Freuden, co-authors. Edited by Kent N. Good and Michele H. Schreiner.

1981, Final Report Mitigation Plan Phase I for the Saskatchewan Intertie Transmission Line Right-of-Way, Northwestern North Dakota. Kent N. Good, co-author.

1981, The Pretty Creek Archaeological Site, 24CB4 & 5. Lawrence L. Loendorf and Lori O. Weston, co-authors.

Foreign Language: German and Spanish

Research Interests: Ceramic analysis from eastern North Dakota and the
the Missouri Trench
North American prehistory and artifact technology
Research photography

VITA

Name: Larry J. Sprunk

Date and Place of Birth: 22 February 1940, Chaffee, North Dakota

Military Service: U.S. Army 1962-1965, 82nd Airborne Division, Honorable Discharge

Education: B.A., Westmar College, LeMars, Iowa
M.A., North Dakota State University, Fargo, North Dakota
Ph.D. Credits, Emporia State College, Emporia, Kansas
Washington State University, Pullman, Washington

Teaching Experience: 1966-1968, Graduate Assistant, North Dakota State University, Fargo, North Dakota
1968-1970, College of Emporia, Emporia, Kansas
1970-1971, Graduate Assistant, Washington State University, Pullman, Washington
1971-1973, Hibbing State Junior College, Hibbing, Minnesota

Job Experience: News Reporter, Mandan Pioneer, Mandan, North Dakota, 1973
Director, North Dakota Oral History Project, 1973-1977
President, Historical Surveys, Inc. (now Historical and Archaeological Surveys, Inc.) 1977-1980

Memberships: Western Writers of America, Inc.
The North Dakota Society of Germans from Russia
The North Dakota Historical Society, Inc.
Oral History Association

Publications and Productions:

1976, Co-authored, directed and played "Skinner" in "The Handcarved Prairie Rose," a live stage production presented 14 times in 13 North Dakota communities and aired on the state's Prairie Public Television.

1978, Co-authored "A History of the North Dakota State Highway Department," (published in 1979).

1979, Authored "We Remember the Rivers: An Oral History Survey of the River Valleys in the Harry S. Truman Dam and Reservoir Project," including a study of Joseph A. Dice, Bridge Builder. Contract with the Kansas City District, Corps of Engineers.

1979-1980, Oral History of Sites within Proposed Mine Area - Coteau Properties. In conjunction with Cultural Resource Inventory conducted by Historical and Archaeological Surveys, Inc.

1980, Literature Search (History), Cultural Resource Investigation of the Pembilier Lake and Dam Flood Control Project. Conducted for the St. Paul District, Corps of Engineers.

1981, Contributor to Final Report Historical and Archaeological Survey and Testing Project - Proposed Mine Area - Falkirk Mine, McLean County, North Dakota. Conducted for the Falkirk Mining Company, Bismarck, North Dakota.

Guest Lectures and Workshops:

1976 (March), "The Techniques and Equipment of Oral History," University of North Dakota - A Symposium for Highschool History Instructors.

1977 (April), "The Value and Methodology of Oral History," University of Missouri guest lecture for Historic Preservation Class.

1978 (June), "Conducting Oral History Surveys," A workshop conducted for the National Park Service at their Stanton, North Dakota office.

1979 (April), "Oral History: Samples and Suggestions." Guest lecture for Historic Preservation and Anthropology classes, University of Missouri.

1980, Authored "The History of Garrison," for the Garrison North Dakota Civic Club. This city history is for the 75th anniversary of Garrison.

Ongoing, Presenting the "Turkey Track Bill Show" to state, national, and international audiences. The show was written in 1978 and presented as a one hour "Evening with Turkey Track Bill" under the sponsorship of the North Dakota Committee for the Humanities and Public Issues, a state non-profit organization affiliated with the National Endowment for the Humanities. Under this title, the one-man performance was given in 11 North Dakota communities as part of the NDCHPI's Chautauqua series. In 1979, the title was changed, content extended to a full-length dramatic format, and the show independently booked by Historical and Archaeological Surveys, Inc.

Norene Davis Roberts, President
Historical Research, Inc.
5406 Penn Avenue South
Minneapolis, MN 55419
(612) 929-4996 (Office)
(612) 929-2921 (Home)

EDUCATION:

Ph.D., American Studies, University of Minnesota	1978
Minor: historical geography, Minnesota history	
M.A., American Studies, University of Minnesota	1972
Minor: art history, architectural history	
B.A., <u>cum laude</u> , English, University of Massachusetts, Amherst	1968
Graduate work in English literature, Oxford University, G.B.	1968

Dissertation: "An Early Political and Administrative History of the University of Minnesota, 1851-1884"

TEACHING, RESEARCH, AND ADMINISTRATIVE POSITIONS:

1968-75	Instructor and teaching assistant, English, American Studies, Continuing Education, University of Minnesota
1976	Instructor, Minnesota History, Honors Program, College of Liberal Arts, University of Minnesota
1975-77	Administrative and Research Fellow, Vice-President for Academic Affairs, University of Minnesota
1977-78	Undergraduate Advisor, American Studies, University of Minnesota

OTHER EMPLOYMENT:

1978-79	Historian, surveyor, architectural historian, State Historic Preservation Office, Minnesota Historical Society
1979	Freelance editor, Control Data Corporation Education Division

PROFESSIONAL ORGANIZATIONS:

American Association of State and Local History
American Institute of Historic Preservationists
American Studies Association
Council of Minnesota Archaeologists (Associate Member)
Hennepin County Historical Society
Minnesota Historical Society
National Trust for Historic Preservation
Society for the History of Technology
Phi Kappa Phi
Women Historians of the Midwest
Society of Architectural Historians
North Dakota Archaeological Society

Norene Davis Roberts (Continued)

RECENT HISTORICAL REPORTS AND PROJECTS:

- 1978 Historical surveys of Cass and Crow Wing counties, Minnesota; for the National Register of Historic Places; Minnesota Historical Society, State Historic Preservation Office
- 1979 First draft, Historic Preservation for Minnesota Communities; Minnesota Historical Society and Minnesota State Planning Agency (1980)
- 1979 Researcher, writer, for Seward Neighborhood History Committee; and two articles in Seward Profile, September, 1979, on the history and development of Seward Neighborhood, Minneapolis
- 1979 National Register Evaluation, Historic Survey of the Cedar-Riverside Commercial Area, for Cedar-Riverside Project Area Committee, Minneapolis, Minnesota; HUD funded; Historical Research, Inc. and Lynne Spaeth
Principal Investigator
- 1979 Forthcoming: "King's Fairs and other Minneapolis Expositions," Hennepin County History, Hennepin County Historical Society, Minneapolis, Minnesota
- 1979 A Cultural Resource Records Check and Archaeological Investigation of the Minnesota River Valley Refuge Lands; U.S. Department of the Interior, U.S. Fish and Wildlife Service; Contract no. 14-14-003-79-0199; Archaeological Field Services, Inc.;
Norene Roberts, Historian
- 1980 Feasibility study for a book-length history of the Blandin Foundation, Blandin Paper Company, and C.K. Blandin; Historical Research, Inc. and Lynne Spaeth for the Minnesota Historical Society
Norene Roberts, Historian and co-researcher
- 1980 A Cultural Resources Literature Search and Records Review of the Upper Minnesota River Basin-- Southwestern Minnesota and Northeastern South Dakota; U.S. Army Corps of Engineers, St. Paul District; Contract no. DAMC-79-C-0199; Archaeological Field Services, Inc.
Norene Roberts, Historian
- 1980 Author, forthcoming issue of Roots on Minnesota women; Education Division, Minnesota Historical Society
- 1980 Master Plan for an Interpretive Exhibit, Hubert H. Humphrey Institute of Public Affairs, University of Minnesota; Jeffrey A. Hess;
Norene Roberts, Research historian

Norene Davis Roberts (Continued)

- 1980 A Research, Planning, Evaluation and Design Study Regarding the Renovation and Adaptive Reuse of the Northern States Power Company, Main Street Hydro-Electric Station, St. Anthony Falls; A joint venture with Jeffrey A. Hess, Historical Consultant. Norene Davis Roberts, historian, History/Industrial Archeology Component
- 1980 "Historical Perspectives on People Connected with National Register Sites in Dakota County"; Dakota County Museum; a National Endowment for the Humanities Youth Project. Norene Davis Roberts, Consulting Humanist Scholar
- 1981 Class I and II Cultural Resource Inventory of BLM-Administered Islands and Uplands in the State of Wisconsin; Department of the Interior, Bureau of Land Management, Lake States Office; A joint venture with Archaeological Field Services, Inc. Norene Davis Roberts, co-Principal Investigator, author
- 1981 Cultural Resource Investigation of the Grand Forks/East Grand Forks Urban Study and the East Grand Forks Flood Control Project; U.S. Army Corps of Engineers, St. Paul District; Under subcontract to Archaeological Field Services, Inc., G. Joseph Hudak, Principal Investigator. Norene Davis Roberts, historian, author
- 1981 Cultural Resources Literature Search and Records Review of Grafton, North Dakota Flood Control Project; U.S. Army Corps of Engineers, St. Paul District; Under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Norene Roberts, historian
- 1981 Walking Tour of Lake Harriet, for the Minneapolis Public Library and Information Center; Minneapolis: Portrait of a Lifestyle, National Endowment for the Humanities. Norene Roberts, author
- 1981 A Cultural Resources Inventory of Lands in and adjacent to the city of Rochester, Minnesota. U.S. Army Corps of Engineers, St. Paul District; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Norene Roberts, historian/architectural historian, author
- 1981 Literature Search and Records Review of the Upper Mississippi River Basin: St. Anthony Falls to Lock and Dam 10. Contract No. DACW 37-80-D-0045, St. Paul District, U.S. Army Corps of Engineers; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Norene Roberts, author

Norene Davis Roberts (Continued)

- 1981 Intensive National Register Architectural and Historical Survey of the City of Grand Forks, North Dakota. Grand Forks Community Development Office and the North Dakota State Historic Preservation Office
Norene Roberts, Principal Investigator
- 1981 Cultural Resources Investigation of Homme Reservoir, Walsh County, North Dakota. Contract No. DACW37-80-D-0045, St. Paul District, U.S. Army Corps of Engineers; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator.
Norene Roberts, historian
- 1981 Cultural Resources Investigation of the Eau Galle Reservoir, Wisconsin. Contract No. DACW37-80-D-0045, St. Paul District, U.S. Army Corps of Engineers; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Norene Roberts, historian/architectural historian
- 1981 Historical Photo Exhibit, River Place Development, St. Anthony Falls, Minneapolis. East Bank Riverfront Partners.
Norene Roberts, historian

Norene Davis Roberts (Continued)

RECENT HISTORICAL LECTURES AND PAPERS:

- 1979 "Resort Development in Northern Minnesota," paper delivered
at the Annual Meeting of the Minnesota Historical Society 10/27
- 1979 "Minnesota Lumbering," lecture to the Minnesota History Work-
shop, Minnesota Historical Society 7/24
- 1979 "Franklin Steele: Entrepreneur and Suttler," slide/lecture at
Ft. Snelling, Minnesota Historical Society 7/19
- 1979 "Minnesota Architectural Development," slide/lecture at the
Annual Meeting of the Crow Wing County Historical Society
- 1979 "The Architecture of River Towns in Southeastern Minnesota,"
slide/lecture to the Annual Meeting of the Winona County Historical
Society 11/20
- 1979 Industrial archaeology and development of St. Anthony Falls,
tour for Folwell Jr. High School, Minneapolis, Mn 9/19
- 1979 Walking tour of historic buildings for "Minneapolis: Portrait
of a Life Style," National Endowment for the Humanities Learning
Library Program and the Minneapolis Public Library 9/15
- 1980 "William Watts Folwell," lecture to Folwell Jr. High School,
Minneapolis, Mn 2/20
- 1980 "Early Entrepreneurs in Minnesota"; Have Lunch with a Historian
Program, Educational Division, Minnesota Historical Society and
Ramsey County Historical Society 11/4

Norene Davis Roberts (Continued)

PROFESSIONAL REFERENCES:

Mr. G. Joseph Hudak, President
Archaeological Field Services, Inc.
421 South Main Street Suite 421 F
Stillwater, MN 55082
(612) 439-6782

Mr. Larry Johnson
U.S. Department of the Interior
Bureau of Land Management
125 Federal Building
Duluth, MN 55802
(218) 727-6692

Mr. Jack Cann
Cedar-Riverside Project Area Committee
2000 South Fifth Street
Minneapolis, MN
(612) 338-6375

Mr. Richard Westby, Director
Matthews Neighborhood Center
Seward Neighborhood
2318 29th Avenue South
Minneapolis, MN 55406
(612) 721-6691

Mr. Robert W. Ready, AICP
Executive Secretary
Riverfront Development Coordination Board
Room 235 City Hall
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Joe D. Roberts, Vice President
Historical Research, Inc.
5406 Penn Avenue South
Minneapolis, MN 55419
(612) 929-4996 (Office)
(612) 929-2921 (Home)

EDUCATION:

Ph.D., American Studies, University of Minnesota	1976
M.A., English, University of Oklahoma	1964
B.A., English, Central State University (Oklahoma)	1962

Dissertation: "An Economic and Geographic History of Cushing, Oklahoma from its Origins Through the Oil Boom Years 1912-1917"

TEACHING AND ADMINISTRATIVE POSITIONS:

Communications Instructor, Dakota County Vo-Tech, 1976-80

Coordinator, Prison Project, University Without Walls, University of Minnesota, 1973-75

Instructor, University of Minnesota Department of English, 1970-1973;
1965-68

Instructor, Department of English, Central College, Pella, IA, 1964-65

Instructor, Department of English, University of Oklahoma, 1962-64

PUBLICATIONS:

Script, "The Omnia Story" promotional film, 1978

The materials listed below were published as video cassettes with interactive programmed text. Each title represents a set of fourteen cassettes with texts, for which I provided script and text.

Basic Machine Technology, Cambridge Book Company, 1978

Basic Engine Lathe, Cambridge Book Company, 1978

Oxyacetylene Welding, Cambridge Book Company, 1978

Electric Arc Welding, Cambridge Book Company, 1979

Advanced Welding, Cambridge Book Company, 1979

Intermediate Engine Lathe, Cambridge Book Company, 1979

Sportsmedicine, McGraw-Hill Publications, 1979

Advanced Machine Technology, Cambridge Book Company, 1980

Blueprint Reading, Omnia Corporation, 1980

The Band Saw, DoAll Corporation, 1980

"Machinist/Tool and Die Program" (slide show). Dakota County Vo-Tech, 1980

"Maintain Electric Motors" (slide show with programmed text). 916 Vo-Tech, White Bear Lake, MN, 1980

Joe D. Roberts (continued)

PROFESSIONAL ORGANIZATIONS:

Minnesota Historical Society
National Trust for Historic Preservation
American Studies Association
Hennepin County Historical Society
American Association of State and Local History
American Institute of Historic Preservationists
Society for the History of Technology
Society of Industrial Archeologists
Council of Minnesota Archaeologists (Associate Member)
North Dakota Archaeological Society

RECENT REPORTS AND PROJECTS:

- 1976 Writer, social impact section of Minnesota's bid for the Solar Energy Research Institute

- 1977 Designer, leader of seminar series on the history of the Twin Cities for senior citizens, sponsored by the National Council on Aging and the National American Studies Faculty

- 1980 A Cultural Resources Literature Search and Records Review of the Upper Minnesota River Basin--Southwestern Minnesota and Northeastern South Dakota; U.S. Army Corps of Engineers St. Paul District Contract No. DAWC-79-C-0199; Archaeological Field Services, Inc. Joe Roberts, editor

- 1980 Master Plan for an Interpretive Exhibit, Hubert H. Humphrey Institute of Public Affairs, University of Minnesota; Jeffrey A. Hess, Historical Consultant. Joe Roberts, Audiovisual consultant

- 1980 Rewrite editor, These United States (Two Volumes) by Irwin Unger; for Little, Brown and Company, Boston

- 1980 A Research, Planning, Evaluation and Design Study Regarding the Renovation and Adaptive Reuse of the Northern States Power Company, Main Street Hydro-Electric Station, St. Anthony Falls; Riverfront Development Coordination Board, Minneapolis; A joint venture with Jeffrey A. Hess, Historical Consultant. Joe Roberts, Principal Investigator, History/Industrial Archeology Component

- 1980 Forthcoming: "Ten-Barrel Whodunit: The Red Fork Oil Boom of 1901," Oklahoma Chronicles

- 1981 Historic Photo Exhibit, River Place Development, St. Anthony Falls, Minneapolis. East Bank Riverfront Partners. Joe Roberts, Principal Investigator

Joe D. Roberts (continued)

- 1981 Class I and II Cultural Resource Inventory of BLM-Administered Islands and Uplands in the State of Wisconsin; Department of the Interior, Bureau of Land Management, Lake States Office; A joint venture with Archaeological Field Services, Inc. Joe Roberts, historian
- 1981 Cultural Resource Investigation of the Grand Forks/East Grand Forks Urban Study and the East Grand Forks Flood Control Project; U.S. Army Corps of Engineers, St. Paul District; Under subcontract to Archaeological Field Services, Inc., G. Joseph Hudak, Principal Investigator. Joe Roberts, historian
- 1981 Cultural Resources Literature Search and Records Review of Grafton, North Dakota Flood Control Project; U.S. Army Corps of Engineers, St. Paul District; Under subcontract to Archaeological Field Services, Inc., G. Joseph Hudak, Principal Investigator. Joe Roberts, historian, author
- 1981 Walking Tour of Lake Harriet, for the Minneapolis Public Library and Information Center; Minneapolis: Portrait of a Lifestyle, National Endowment for the Humanities. Joe Roberts, editor
- 1981 A Cultural Resources Inventory of Lands in and adjacent to the city of Rochester, Minnesota. U.S. Army Corps of Engineers, St. Paul District; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Joe Roberts, historian
- 1981 Cultural Resources Investigation of Homme Reservoir, Walsh County, North Dakota; U.S. Army Corps of Engineers, St. Paul District; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Joe Roberts, historian, author
- 1981 Cultural Resources Investigation of the Eau Galle Reservoir, Wisconsin. U.S. Army Corps of Engineers, St. Paul District; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Joe Roberts, historian
- 1981 Literature Search and Records Review of the Upper Mississippi River Basin: St. Anthony Falls to Lock and Dam 10. U.S. Army Corps of Engineers, St. Paul District; under subcontract to Archaeological Field Services, Inc. G. Joseph Hudak, Principal Investigator. Joe Roberts, author
- 1981 Intensive National Register Architectural and Historical Survey of the City of Grand Forks, North Dakota. Grand Forks Community Development Office and the North Dakota State Historic Preservation Office. Joe Roberts, historian

Gary P. Henrickson
Staff Historian
Historical Research, Inc.
5406 Penn Avenue South
Minneapolis, MN 55419
(612) 929-4996

EDUCATION:

Ph.D., American Studies, University of Minnesota,	1981
M.A., American Studies, University of Minnesota	1976
B.A., Humanities, University of Minnesota	1970

ACADEMIC EMPLOYMENT

1977-1981	Instructor, Department of English, Program in American Studies, Department of Rhetoric, University of Minnesota
1975-1977	Tutor, Study-Skills Center, General College, University of Minnesota

OTHER EMPLOYMENT

1980	Field Instruction Administrator, Fulbright Summer Seminar for European Secondary School Instructors, Program in American Studies, University of Minnesota
1978-1979	Technical Writer, Minnesota Department of Transportation
1977	Governor's Intern, Minnesota Department of Transportation
1970-1972	U.S. Army Field Artillery; honorable discharge Bronze Star, Vietnam, 1972

RECENT REPORTS AND PROJECTS:

1979	Slide/audio presentation, Interstate 494 Preliminary Hearing, District 5, Minnesota Department of Transportation Gary Henrickson, author
1979	Noise Wall Study and Report to the Minnesota State Legislature, District 5, Minnesota Department of Transportation Gary Henrickson, contributing author
1979	District 9 Organizational Handbook, District 5, Minnesota Depart- ment of Transportation Gary Henrickson, author
1981	Intensive National Register Architectural and Historical Survey of Grand Forks, North Dakota. Community Development Office of Grand Forks and the North Dakota State Historic Preservation Office. Gary Henrickson, staff historian
1981	Historic Photo Exhibit, River Place Development, St. Anthony Falls, Minneapolis. East Bank Riverfront Partners. Gary Henrickson, staff historian

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